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ABSTRACT

Documents announced with VT numbers only in the Volume 6, Number 3 issue (VT 020 112) of "Abstracts of Research and Related Materials in Vocational and Technical Education" (ARM) are included in this microfiche set. Microfiche availability for these documents is shown on the ARM resume as MF AVAILABLE IN VT-ERIC SET. The microfiche set is arranged in the following sequence: (1) a Vocational Technical (VT) number index to documents in the microfiche collection, (2) the subject and author indexes from ARM, and (3) the full text of documents listed in the VT number index. The texts are filmed continuously in VT number sequence. (MF)

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in Vocational and Technical Education

(ARM)

Compiled and Indexed by the Center for
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VT020 113

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INTRODUCTION

This collection of microfiche consists of the documents which are announced with VT numbers only in Abstracts of Research Materials in Vocational and Technical Education (ARM), Vol. 6, No. 3, 1973. Microfiche availability is shown in the resume as MF AVAILABLE IN VT-ERIC SET. The documents are grouped in VT number sequence and filmed continuously as a microfiche set. These documents are not available on microfiche as individual items, but are obtainable only through purchase of this set, or from agencies who have this set and have the capability of reproducing microfiche. The microfiche set includes the following sections:

1. Vocational Technical (VT) Number Index to Microfiche Collection of Clearinghouse Documents Reported in ARM, Vol. 6, No. 3, 1973.

2. Selected indexes from ARM, Vol. 6, No. 3, 1973.

   a. Subject Index
   b. Author Index

   The documents identified in the indexes with an ERIC Document (ED) number are usually available as separate documents from the ERIC Document Reproduction Service (EDRS). Information about EDRS Service can be found in ARM or Research in Education (RIE).[1] Items not available through EDRS will include a source of availability. The page numbers shown in these indexes refer to the locations of the abstracts in ARM, Vol. 6, No. 3, 1973.

3. The full text of documents listed in the Vocational Technical (VT) Number Index to Microfiche Collection of Clearinghouse Documents Reported in ARM, Vol. 6, No. 3, 1973.

[1] Research in Education is published 12 times a year. The first issue was no. 11, November 1966. Subscription: Domestic $38.00 a year; foreign $47.50. Single copy: Domestic $3.25. Send a check or money order (no stamps) to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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ABSTRACT - SUMMARIZED IN THIS DOCUMENT ARE THE FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS OBTAINED FROM THE ADVISORY COUNCIL'S ASSESSMENT OF VOCATIONAL EDUCATION PROGRAMS IN THE STATE OF NORTH CAROLINA. HAVING AS THEIR GOALS THAT: EVALUATION SHOULD FOCUS ON: (1) THE STATE'S GOALS AND PRIORITIES AS SET FORTH IN THE STATE PLAN, (2) THE EFFECTIVENESS WITH WHICH PEOPLE AND THEIR NEEDS ARE SERVED, (3) THE EXTENT TO WHICH COUNCIL RECOMMENDATIONS HAVE RECEIVED DUE CONSIDERATION, AND (4) EXPRESSED VIEWS TOWARD VOCATIONAL EDUCATION BY THE GENERAL PUBLIC, THE EVALUATION TEAM LAUNCHED VIGOROUS INVESTIGATIONS INTO EACH OF THE FOUR AREAS. AN ANALYSIS OF THE FINDINGS INDICATED THAT: (1) THE STATE GOALS AND PRIORITIES WERE SUITABLE IN TERMS OF STUDENT NEEDS AND TARGET POPULATIONS FOR WHICH THEY WERE INTENDED, (2) THE COORDINATION OF PROGRAMS FOR THE DISADVANTAGED AND HANDICAPPED HAVE BEEN EXEMPLARY, (3) ADVISORY COMMITTEES ARE BEING USED EXTENSIVELY IN THE PLANNING, HOWEVER, NOW MORE EFFORTS ARE BEING MADE TO BETTER COORDINATE SECONDARY AND POST SECONDARY PROGRAMS, (4) POSITIVE ACTION IS BEING TAKEN ON COUNCIL RECOMMENDATIONS, AND (5) MUCH EFFORT IS BEING EXERTED TO INVOLVE THE PUBLIC IN CURRICULUM DECISIONS. (SN)

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North Carolina

ANNUAL EVALUATION REPORT - FY 1971

State Advisory Council on Vocational Education

Raleigh, North Carolina

August, 1971

VT017433

SUMMARY STATEMENT/COMMENDATIONS/RECOMMENDATIONS

The Fiscal Year 1971 Annual Evaluation Report of the North Carolina State Advisory Council on Vocational Education was drafted by the Council staff. It was reviewed and revised by the Evaluation and Special Studies Committee of the Council and other appropriate persons, and submitted to the Council for review, revision, and adoption.

Some of the findings/conclusions called for are in areas for which objective data were not systematically collected. Other data had not been analyzed in the State agencies in time for this evaluation. Therefore, the FY 71 Annual Evaluation Report is somewhat more subjective than we would wish. We believe, however, that our findings and recommendations are appropriate. We believe also that implementation of these recommendations would lead to improved vocational education opportunities in the State and to methods for more objectively evaluating the effectiveness of programs, services, and activities.

Our recommendations have been drafted in broad, general terms. This is in accord with our belief that we should be more concerned with overall direction than in the details of administration. We will share ideas for implementation of recommendations as requested by the State Board and its staffs.

Commendations

The Council commends the State Board of Education and its staffs on their efforts of the past year to extend and improve programs of occupational education in the State.

If the Council were to attempt to list all the laudatory efforts of the Board and its staffs, the list would be lengthy, however it would like to single out a few of these.

1. The emphasis on professional development of occupational education teachers and administrators.

2. The continued encouragement for effectively articulating secondary and postsecondary occupational education programs.

3. The new State Plan for Occupational Education interrelating mission, priorities, and objectives and moving toward the setting of objectives in terms of output measures.

4. The work being done by the Staffs in the development of a new data system which should greatly improve program planning and evaluation efforts.

5. The downward extension of occupational education to the seventh and eighth grade levels.

6. Improvement in comprehensiveness of occupational education programs at the secondary level and in program balance.

7. The positive response to recommendations of the State Advisory Council since its development.

8. Cooperation of the Board and its staffs (including the State Department of Public Instruction, the Controller's Office, and the Department of Community Colleges) with the State Advisory Council.

Recommendations

1. That the State Board of Education attempt some analysis of occupational education training being conducted in private schools, other commercial concerns, and in industry and that this information

be used in planning and evaluating efforts of the State Board agencies in the area of career education.

2. That the State Board of Education designate one or more of the Multi-County Planning Regions to be used in pilot efforts for planning, articulation, and evaluation of occupational education programs.

3. That articulation efforts between secondary and postsecondary institutions be continued and further strengthened to the end that programs (and guidance activities) at the two levels are complementary and provide a planned transition from high school occupational education programs into postsecondary occupational education programs.

4. That job placement and followup of graduates of occupational education programs be encouraged as integral parts of the programs.

5. That vigorous State level leadership be given to promoting the involvement of employers and lay citizens in planning, promoting, and evaluating occupational education programs through the development and use of area and administrative unit level advisory committees.

6. That strong leadership and encouragement be given to schools and school systems with limited occupational education offerings to increasing the scope and quality of opportunities available to their students.

7. That the mutually beneficial relationships developed between the State Board of Education and the State Advisory Council on Vocational Education be continued and strengthened during the present year.

8. That occupational education youth organization activities continue to be recognized and strongly encouraged and supported as integral parts of occupational education curricula.

9. That the State Board of Education and the State Advisory Council on Vocational Education jointly sponsor at least three public meetings in strategic geographical locations during Fiscal Year 1972 to allow members of the general public opportunity to express views concerning vocational education and to react to provisions of the State Plan for Occupational Education.

Goal 1. Evaluation should focus on the State's goals and priorities as set forth in the State Plan.

A. Items Evaluated: An analysis of program emphases, vocational education objectives, target populations, and target areas.

B. Findings/Conclusions:

1. How appropriate were the State's goals and priorities?

The goals and priorities were suitable in terms of student needs and comprehensive in terms of emphases on target populations and target areas. Efforts were made to relate the goals and objectives to manpower development in the State. However, hard data were not available to determine how well these reflected and related to the output of training programs in industry and private schools. This is an area needing attention in order for comprehensive planning to occur.

2. Were procedures set forth in the State Plan to accomplish each stated goal and/or objective or priority?

The procedures were not clearly delineated, the goals, objectives, and priorities were not displayed in an interrelated fashion, and responsibilities for seeing that procedures were implemented were not clearly defined. Following a recommendation to this effect by the State Advisory Council, the FY 72 State Plan was developed to show the interrelationship of goals, objectives, and priorities and to pinpoint responsibilities. The Council is extremely pleased with this direction in State Plan development and commends the State Board of Education and its staffs for this step.

3. To what extent were the State's goals met during the year under review and to what extent does this represent an improvement over last year?

Data were not available at the time of the drafting of this report for a definitive analysis of the extent to which objectives were reached. A subsequent analysis of this area will be made by the Council as soon as data are available from the State agencies.

C. Recommendations:

1. That the State Board of Education attempt some analysis of occupational education training being conducted in private schools, other commercial concerns, and in industry, and that this information be used in planning and evaluating efforts of the State Board agencies in the area of career education.

Goal 2. Evaluation should focus upon the effectiveness with which people and their needs are served.

A. Items Evaluated: Availability of program offerings; articulation efforts; downward extension of occupational education programs.

B. Findings/Conclusions:

1. Are there valid data available on job opportunities and manpower needs for planning purposes?

The State has recognized the lack of valid manpower data in forms usable by State and local occupational education planners. A major effort is being made during this year to correct this situation. The Divisions of Occupational Education in both the Department of Public Instruction and the Department of Community Colleges are participating in this effort. The State Advisory Council strongly endorses this effort which is being coordinated by the Department of Administration.

On May 7, 1970, the Honorable Robert W. Scott, Governor of North Carolina, designated 17 Multi-County Planning Regions for North Carolina, with the idea that an official system of uniform, multi-county planning and development regions would facilitate data gathering and analysis, planning and development activities, and program administration. The Council encourages the State Board of Education to use these Muiti-County Planning Regions as a unit for analysis of manpower data, for articulated planning of occupational education programs, and evaluation.

2. To what extent is there coordination of training opportunities among agencies?

The coordination and planning of training opportunities in terms of programs for the disadvantaged and handicapped have been exemplary.

Programs under the Division of Industrial Services and programs under the Manpower Development and Training Act in the Department of Community Colleges have been coordinated with other State agencies.

In the development of new curricula or in the development of curriculum materials, appropriate agency representatives were invited to serve on advisory committees, to review curriculum guides, etc.

Programs in occupational extension at the postsecondary level have had extensive coordination of program plans with other agencies.

3. To what extent is there coordination and articulation among secondary, postsecondary and adult education agencies?

Much progress has been made over the past two years in coordinating and articulating efforts among secondary and postsecondary institutions. This articulation has taken many forms and has been highly commendable. However, additional steps need to be taken. Programs at the two levels should be complementary. A planned transition from high school occupational programs into postsecondary occupational programs should be developed. Programs at the postsecondary level should be flexible enough in their organization to accommodate students who have developed vocational knowledge and skills in another program or through employment.

4. To what extent are employer needs being considered in program planning?

At the postsecondary level, advisory committees are used extensively in program and curriculum planning at both the State and local levels. State level use of advisory committees at the secondary level is becoming more prevalent. Attention needs to be given to organizing and using advisory committees more extensively and more effectively at district and local levels.

5. To what extent are the educational institutions assuring job placement of graduates?

This is a difficult area to evaluate because some secondary schools and postsecondary institutions assume great responsibility for placement while others assume little or none. The Council believes that placement and followup of graduates are integral and necessary parts of good occupational education programs and encourages the State Board staffs to promote more active placement and followup services.

6. To what extent is vocational education involved in total manpower development programs of the State?

Occupational education programs at both the secondary and postsecondary levels make significant contributions to manpower development in the State. These include curriculum programs, adult education programs, occupational extension programs, and industrial services programs.

7. To what extent are vocational education opportunities available to all the people at the secondary, postsecondary and adult levels?

The Council finds that comprehensive programs of occupational education (3 or more occupational offerings) are still not available in approximately 1/3 of our secondary schools. Although significant progress is being made in this area, the Council encourages the State Board of Education and its staff in the Department of Public Instruction to give strong leadership and encouragement to schools and school systems with limited occupational education offerings to increasing the scope of opportunities available to their students.

8. What indications are there that students feel that vocational programs adequately meet their needs?

The Council has not studied this question extensively although preliminary results of a study being completed for the Council by the Division of Occupational Education, School of Education, North Carolina State University, indicates that a high percentage of students enrolled in occupational programs are satisfied and feel their program is as good as any other in the school. The fact that about forty percent of the students not enrolled in occupational education programs would do so if they could find one which interested them is cause for concern and merits further in-depth study.

9. What is being done about occupational awareness and orientation at the elementary level?

Much attention is being given to the downward extension of appropriate occupational education programs in the schools of North Carolina. The "Middle School" occupational education exploratory programs authorized and funded by the North Carolina General Assembly in 1969, and expanded through additional appropriations in 1971, have been highly successful.

On December 3, 1970, the State Board of Education adopted the following policy concerning occupational education:

Downward Extension of Occupational Education

Approval is requested for the downward extension of occupational education programs which are funded with regular funds at the seventh and eighth grade levels. Programs can be funded at this level when such programs meet the necessary criteria established by the State Board of Education and the particular local board of education in the unit in which action is being requested.

Exemplary programs are being conducted in the State which give emphasis to the development of appropriate occupational awareness and orientation activities at the elementary level.

The State Plan for Occupational Education contains both continuing and specific objectives for developing occupational awareness and orientation activities at this level.

The Council strongly supports this direction.

C. Recommendations:

1. That the State Board of Education designate one or more of the Multi-County Planning Regions to be used in pilot efforts for planning, articulation, and evaluation of occupational education programs.

2. That articulation efforts between secondary and post-secondary institutions be continued and further strengthened to the end that programs (and guidance activities) at the two levels are complementary and provide a planned transition from high school occupational education programs into postsecondary occupational education programs.

3. That job placement and followup of graduates of occupational education programs be encouraged as integral parts of the programs.

4. That vigorous State level leadership be given to promoting the involvement of employers and lay citizens in planning, promoting, and evaluating occupational education programs through the development and use of area and administrative unit level advisory committees.

5. That strong leadership and encouragement be given to schools and school systems with limited occupational education offerings to increasing the scope and quality of opportunities available to their students.

Goal 3. Evaluation should focus on the extent to which Council recommendations have received due consideration.

A. Items Evaluated: Action taken or being planned on each recommendation of the Council.

B. Findings/Conclusions:

1. To whom were recommendations made?

The State Advisory Council on Vocational Education prepared a list of recommendations in connection with its Fiscal Year 1970 Annual Evaluation Report. These recommendations were submitted to the State Board of Education and, through the State Board, copies were transmitted to the United States Office of Education and to the National Advisory Council.

2. What actions have been taken and to what extent have these actions fulfilled the intent of the recommendations?

The recommendations of the State Advisory Council were presented to the State Board of Education in a regular session with brief explanation of them given. At a subsequent time, the Executive Director of the Council was invited to attend a meeting of the State Board at which time the recommendations and possible action were discussed at length.

The Executive Director also explained the recommendations to staff members in the Division of Occupational Education in the State Department of Public Instruction and to the Division Director in the Department of Community Colleges.

Copies of the recommendations were mailed to the governor, presidents of all institutions in the Community College System,

superintendents of local education agencies in the State, local directors of occupational education, and vocational teacher educators.

The State Director of Occupational Education has reported to the Council on action being taken on each of the recommendations contained in the Fiscal Year 1970 Annual Evaluation Report.

The Council is pleased to report that positive action has been taken or is planned on each of the recommendations made.

3. What factors influenced the success or failure of implementation of the recommendations?

The State Advisory Council and the State Board of Education and its staffs have developed a good working relationship, have maintained joint dialogue during the development of the recommendations and the carrying out of them, and each has assisted the other in reaching its goals and objectives.

The State Board of Education and its staffs have consistently involved the State Advisory Council and its staff in an advisory capacity in the planning, implementation, and evaluation of programs.

The Council regularly invites the Director of Occupational Education in the Department of Public Instruction and the Director of Occupational Education in the Department of Community Colleges to participate in Council deliberations and provides time for them to bring matters of concern to the attention of the Council.

4. What follow through is being maintained by the Council?

The Executive Director of the Council is assisting the State Board staffs in planning for carrying out the recommendations.

C. Recommendations:

1. That the mutually beneficial relationships developed between the State Board of Education and the State Advisory Council on Vocational Education be continued and strengthened during the present year.

Goal 4. Evaluation should focus on expressed views toward vocational education by the general public.

A. Items Evaluated: Views expressed by members of the general public in a meeting designed to allow them to express views to the Council.

B. Findings/Conclusions:

Concern was expressed regarding differences in Veterans Administration regulations as applied to students in various types of institutions.

Youth organizations were extolled as having contributed to the total development of students enrolled in occupational education and as tools to motivate students, enhance, enrich, and complement instruction in occupational education. Through participation in youth organizations, students develop leadership ability, citizenship skills, social competency, and a wholesome attitude toward living, working and serving. Concern was expressed regarding continued future growth of the organizations, image of the organizations and of occupational education, and time of state staff members to assist local chapters with activities.

Praise for occupational education programs and the "live project" approach were given. Concern over the State law limiting the cost of live projects to $7,000 was expressed.

The need for more cooperative planning in the public schools was expressed. School personnel must do a more effective job in helping students bridge the gap between school and work.

The image of occupational education is changing and improving.

Hospitals are very much indebted to occupational education

At the present time the program is doing an outstanding job throughout the State. Adult vocational programs are providing the knowledge, knowhow and experiences which are needed tremendously throughout North Carolina.

D. Recommendations:

1. That occupational education youth organization activities continue to be recognized and strongly encouraged and supported as integral parts of occupational education curricula.

2. That the State Board of Education and the State Advisory Council on Vocational Education jointly sponsor at least three public meetings in strategic geographical locations during Fiscal Year 1972 to allow members of the general public opportunity to express views concerning vocational education and to react to provisions of the State Plan for Occupational Education.

APPENDIX

NORTH CAROLINA STATE ADVISORY COUNCIL ON VOCATIONAL EDUCATION

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Gerald B. James, Vice-Chairman
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Richard Maxwell
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VT 017 441

VT 017 441
PERDUE, MAXINE W.
A CAREER AWARENESS, ORIENTATION AND PLACEMENT PROGRAM FOR THE WAYNE HIGH SCHOOL ATTENDANCE AREA. FINAL REPORT.

WAYNE COUNTY BOARD OF EDUCATION, W.VA.
WEST VIRGINIA STATE BOARD OF EDUCATION, CHARLESTON. DIV. OF VOCATIONAL-TECHNICAL EDUCATION.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - JUL72 79P.

DESCRIPTORS - PILOT PROJECTS; CAREER EDUCATION; PROGRAM DEVELOPMENT; CAREERS; CAREER CHOICE; *VOCATIONAL DEVELOPMENT; *OCCUPATIONAL GUIDANCE; CAREER PLANNING; *OCCUPATIONAL INFORMATION; *JOB PLACEMENT; *GOAL ORIENTATION

ABSTRACT - THIS PROJECT WAS INITIATED TO AWAKEN THE INTEREST AND CURIOSITY OF STUDENTS TOWARD THE OCCUPATIONS OF MEN AND WOMEN BY: (1) MAKING THEM MORE AWARE OF VOCATIONAL POSSIBILITIES AT THE ELEMENTARY LEVEL, (2) PROVIDING ADDITIONAL INFORMATION TO JUNIOR HIGH STUDENTS CONCERNING OCCUPATIONAL INFORMATION, (3) DEVELOPING THE STUDENTS' KNOWLEDGE OF THE GUIDANCE RESOURCES AVAILABLE IN HIS SCHOOL AND COMMUNITY, (4) PROVIDING COUNSELING TO STUDENTS CONCERNING VOCATIONAL CURRICULUM, (5) PROVIDING PLACEMENT SERVICES FOR VOCATIONAL STUDENTS, AND (6) PROVIDING COUNTY SUPERVISORY PERSONNEL WITH INFORMATION CONCERNING CURRICULUM REVISION. ONE HIGH SCHOOL AND EIGHT FEEDER ELEMENTARY SCHOOLS PARTICIPATED IN THIS PROJECT OPERATION WHICH INVOLVED THE EFFORTS OF SUPERVISORS, COUNSELORS, AND CO-COUNSELORS. AN EVALUATION OF THE PROJECT REVEALED THAT THE MEASUREMENTS SPECIFIED IN MEETING THE OBJECTIVES WERE EFFECTIVELY FOLLOWED AND COMPLETED.
(AUTHOR/SN)

U.S. DEPARTMENT OF HEALTH
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Final Report

Project Number WV-71-E-3
Grant Number DVE-21-WV-71-E-3

A Career Awareness, Orientation and Placement Program for the Wayne High School Attendance Area

Maxine W. Perdue

Wayne County Board of Education
Wayne, West Virginia 25570

July 1972

West Virginia
State Board of Education
State Department of Education
Bureau of Vocational, Technical and Adult Education
Division of Vocational Education

VT017441

Final Report

Project Number WV-71-E-3
Grant Number DVE-21-WV-71-E-3

A Career Awareness, Orientation and Placement Program for the Wayne High School Attendance Area

Henry A. Ray, Project Director
Wayne County Board of Education

Wayne, West Virginia 25570
July 1972

The work presented or reported herein was performed pursuant to a grant with the State Board of Education, Division of Vocational Education. However, the opinions expressed herein do not necessarily reflect the position or policy of the State Board of Education, and no official endorsement by the State Board of Education shall be inferred.

West Virginia
State Board of Education
State Department of Education
Bureau of Vocational, Technical and Adult Education
Division of Vocational Education

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A project with the scope of this exemplary vocational program required the united efforts of many individuals. For this reason special recognition must be given to all of those who gave advice, assistance, time and encouragement, or who helped in any way with the project.

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William M. Carey, Counselor, Vocational Rehabilitation Division
Donald Chumley, Counselor, Vocational Services for the Blind and Visually Impaired

The "Guidance Office Girls"
Wayne High School

SUMMARY

The time period covered by the exemplary project was from August 23, 1971, to June 30, 1972.

There were six specific objectives. They were as follows:

1. To make students in the elementary grades more aware of vocational possibilities.
2. To provide additional information to all junior high school students concerning occupational information and to aid in the improvement of exploration courses already provided.
3. To develop the student's knowledge of the guidance resources of his school and community.
4. To provide counseling to students concerning vocational curriculum and to aid in choosing vocational courses consistent with the student's interest and ability.
5. To provide placement services for vocational students in cooperation with the West Virginia Employment Security and other agencies.
6. To provide county supervisory personnel with information concerning vocational curriculum revision.

The project was planned to create a vocational program with the following career aspects:

1. Grades 1 through 6--Create career awareness
2. Grades 7 through 9--Career orientation
3. Grade 10 --Career exploration
4. Grades 11 and 12 --Placement in training for specific careers
5. Graduates --Aid in job placement

Since the project was too extensive for one counselor, others employed in the school system contributed to the work on the project as indicated below:

1. The elementary supervisors planned the development of the career awareness phase at the elementary level.
2. The counselor at the junior high school planned and presented the orientation and career exploration programs for the junior high school students.

3. The co-counselor at the high school counseled primarily with the students enrolled in the college preparatory and the liberal arts curriculums.

The six objectives of this vocational project were either accomplished or in the process of being accomplished at the time of this report. An evaluation of the project indicated that the measurements specified in meeting the objectives were effectively followed and completed.

The recommendations for those planning a similar project are as follows:

1. A secondary school similar to Wayne High School and with a comparable enrollment needs a vocational counselor.
2. The duties of the vocational counselor should be confined to one school.
3. Job placement for seniors should be done by a qualified placement director working full time. In Wayne County a placement director could serve the seniors graduating from all of the high schools.

Chapter 1

INTRODUCTION

In 1971 the Economic Development Administration listed Wayne County, West Virginia, as a rural, depressed area with Wayne High School, Wayne Junior High School, and the elementary schools within the attendance area of these two schools as being eligible for ESEA funds. In order to meet the special needs of students with this educational and socio-economic background an expanded vocational program was of prime importance.

This exemplary vocational project was designed with these students and their particular needs in mind. The program was planned to provide relevant experiences for these students along with vocational information which would assist the students in making wiser career choices.

A vocational counselor was employed to implement these plans. The office of the counselor was at Wayne High School, and the main emphasis of the program was placed on the work of the counselor with the students enrolled in the vocational curriculum of this senior high school.

PURPOSE OF THIS PROJECT

The purpose of this exemplary project in vocational education was to awaken the interest and curiosity of students toward the occupations of men and women in the world of work. A student exposed to the many clusters of occupations explores, learns, and broadens his own career concepts.

To acquaint the student with this wider concept of occupations the project was designed to do the following:

1. Create an awareness of the world of work
2. Emphasize the many vocational choices open to the students
3. Explore occupational choices
4. Participate in vocational training courses
5. Assist with the job placement of graduates

The vocational counselor employed for this project was asked to aid in the job placement of seniors graduating in the vocational curriculum by using these procedures:

1. Visiting the personnel managers of industries
2. Meeting with counselors from the West Virginia Employment Security Department, Vocational Rehabilitation, and other manpower agencies

The goals of the program were designed to create current as well as long-range activities on the part of the vocational counselor and the schools involved.

GOALS AND OBJECTIVES OF THIS PROJECT

The goals and objectives for the Career Awareness, Orientation and Placement Program for the Wayne High School Attendance Area were:

1. To make students in the elementary grades more aware of vocational possibilities
2. To provide additional information to all junior high school students concerning occupational information and to aid in the improvement of exploration courses provided
3. To develop the student's knowledge of the guidance resources of his school and community
4. To provide counseling to students concerning vocational courses consistent with the students interest and ability
5. To provide placement services for vocational students in cooperation with the West Virginia Employment Security Department and other agencies.
6. To provide county supervisory personnel with information concerning vocational curriculum revision

LIMITATIONS OF THIS PROJECT

The program was planned with the provision that one full-time vocational guidance counselor be employed to work at Wayne High School. This counselor was to assist in the career development plans of the project director for the "feeder schools." These schools included Wayne Junior High School, Beech Fork Elementary, Cove Gap Elementary, Crockett Elementary, Dunlow Elementary, East Lynn Elementary, Genoa

Elementary, Lavalette Elementary and Wayne Elementary.

During the 1971-72 school term, Supervisor of Elementary Education, Helen Z. Muller, worked on integrating career studies into the reading programs in the schools. This was part of the beginning phase of the career awareness program in the elementary schools. The vocational counselor assisted in this program by providing a list of appropriate materials from which the supervisor made a selection. These materials were ordered for use in the elementary program.

The project specified that the activities of the Wayne Junior High School Counselor, Faye J. Stephens, would supplement those already in progress with the ultimate goal of scheduling exploratory courses in the vocational area or general courses introducing several different fields.

Before the employment of a vocational counselor, Wayne High School had a full-time counselor, J. Scott Jarrell. Both of these counselors worked as a team within their department. However, the vocational counselor was charged with the responsibility of assisting students enrolled in the vocational curriculum, and providing placement assistance to the vocational graduates requesting this help.

As specified in the project proposal, the vocational counselor received the full cooperation of the county supervisory staff. This assistance was given in full measure and was of inestimable value in the work done by this counselor.

The time limit for the employment of the vocational counselor was ten and one-half months. The dates of this employment extended from August 23, 1971, to June 30, 1972.

Chapter 2

METHODS AND PROCEDURES FOR IMPLEMENTING THE PROGRAM

The methods and procedures used in the project were specified in detail in the proposal for this exemplary project. An examination of the general design, schools and participants, school enrollment, materials, and methods used in the program will indicate the scope of the original plan.

GENERAL DESIGN

The project was planned to create a vocational program with the following career aspects:

1. Grades 1 through 6--Create career awareness
2. Grades 7 through 9--Career orientation
3. Grade 10 --Career exploration
4. Grades 11 and 12 --Placement in training for specific careers
5. Graduates --Aid in job placement

Since the project was too extensive for one counselor, others employed in the school system contributed to the work on the project as indicated below:

1. The elementary supervisors planned the development of the career awareness phase at the elementary level.
2. The counselor at the junior high school planned and presented the orientation and career exploration programs for the junior high school students.
3. The co-counselor at the high school counseled primarily with the students enrolled in the college preparatory and the liberal arts curriculums. He shared the total work load, and gave freely of his time, knowledge, and experience.

SCHOOLS AND PARTICIPANTS

As stated previously, the participants in the project consisted of Wayne High School, Wayne Junior High School, and eight "feeder" elementary schools. The eight elementary schools had an enrollment of approximately

seventeen hundred students. Classroom teachers in these schools will be prepared to implement the career awareness program into their classrooms after they have received in-service training. This training program was in the planning stages during the 1971-72 school term. When it is completed, the in-service training program will be conducted by the supervisory staff of the Wayne County Schools. Supplying some of the materials for this planning was the responsibility of the vocational counselor.

Table 1 on page 6 shows the information on the enrollment of the participating schools as well as the number of students from low-income families and the percent of low-income families. This report was prepared by the county staff as part of the original proposal for this project.

At the beginning of the 1971-72 school term, the enrollment for Wayne High School was 692 students. On March 15, 1972, a follow-up was made of the enrollment. Table 2 below gives this enrollment using curriculum and grade totals. Due to transfers and dropouts, the totals had changed as indicated below on the totals for the grade enrollment.

Table 2

Wayne High School Enrollment, March 15, 1972

Curriculum	Grade 9	Grade 10	Grade 11	Grade 12	Totals
Basic Educ.	2	25	12	5	44
College Prep.	20	67	48	33	168
Liberal Arts	25	38	54	53	170
Voc. Agric.	11	9	6	6	32
Voc. Business	34	39	26	27	126
Voc. Home Ec.	6	24	9	2	41
Voc. Industrial	16	39	17	10	82
Voc. Orn. Hort.	1	0	1	3	5
March 15, 1972 TOTALS	115	241	173	139	668
August 23, 1971 TOTALS	129	245	171	147	692

Table 1

Information From ESEA Application 1972

School	1970-71 Enroll.	Exp. 71-72 Enrollment	1972 Low-Income	% From Low-Income Families
Wayne High	535	565	195	32.2
Wayne Junior	710	700	251	34.1
Beech Fork	140	135	77	53.8
Cove Gap	76	81	67	77.0
Crockett	143	140	92	62.2
Dunlow 45% to Wayne Jr. & Sr.	210	211	147	67.7
East Lynn	340	363	139	38.3
Genoa	164	171	96	51.3
Lavalette 55% to Wayne Jr. & Sr.	400	438	75	17.3
Wayne Elem.	548	536	217	40.5

MATERIALS AND METHODS

Each grade level was given appropriate occupational materials. These were:

1. Printed materials
2. Audio-visual materials
3. Simulated job experience kits
4. Materials and equipment available in the Wayne County Schools Media Center

The methods to be utilized in the presentation of the materials for teaching the total career awareness concept were as follows:

1. Elementary students
   a. Films, filmstrips, records, tapes and other materials developed especially for primary students were to be purchased and used.
2. Junior high school students
   a. Additional materials were to be purchased for the orientation of junior high school students.
3. Grade 9
   a. Career Exploration Unit
      (1) Exposure of students to actual work situations
      (2) School journeys
      (3) Organization of instructional materials for more intensive study
      (4) Exploration of materials for broad occupational clusters
      (5) Completion of an in-depth study of at least one career by each student
   b. Tapes, textbooks, films, filmstrips, and career monographs were provided for this study.
   c. Two Job Experience Kits were purchased from Science Research Associates to provide a "hands on" experience with twenty jobs.
4. Grade 10
   a. The students were involved in specific vocational courses.
   b. Boys and girls explored careers associated with these courses.
5. Grade 11
   a. Students at this level chose a field for more intensive training.

6. Grade 12
   a. Conferences with the counselor
   b. Beginning of the search for employment for some students
      (1) This search aided by the counselor with
         (a) W. Va. Department of Employment Security
         (b) Visits to personnel managers of local industries in search of employment possibilities
         (c) The spending of considerable time during the summer months actually placing students in jobs

As originally conceived in the project, the Wayne Junior High School counselor was to teach the career exploration unit and give individual counseling to the ninth grade students. Due to the large enrollment at the junior high school, 129 students were transferred to Wayne High School. Since the majority of these students enrolled in the vocational curriculum, the vocational counselor at Wayne High School taught the career exploration unit and counseled with these students.

The project proposal suggested that the work load be divided between the two Wayne High School counselors with the vocational counselor working with students enrolled in the vocational curriculum, and the other counselor working with students enrolled in the college preparatory and liberal arts curriculums. This suggestion did not rule out the idea of either counselor working with any student requesting his services. Both counselors adhered to this work division suggestion as much as possible.

Chapter 3

THE RESULTS AND ACCOMPLISHMENTS OF THIS EXEMPLARY PROJECT

Wayne High School has two offices for the two counselors along with an adjacent waiting room. Filing cabinets are centrally located for easy access from these rooms or from the office of the principal. With almost seven hundred students enrolled at Wayne High last year the two counselors had a busy schedule. Students at this school may make an appointment for a specific time with the counselors, or they may "drop in" at their convenience. The waiting room has materials on occupations for reading, listening, or checking out for further study.

INDIVIDUAL AND GROUP GUIDANCE SESSIONS

Individual Contacts

The vocational counselor met individually with 200 girls and 220 boys for a total of 420 individual contacts. These 420 students met with the vocational counselor for a total of 971 sessions ranging from one session for some students to several sessions with others. Many of the individual contacts were not recorded due to the lack of time on particularly busy days. None of the time spent enrolling new students, changing schedules, etc., during the first two weeks of school was recorded.

Group Contacts

The vocational counselor had 19 group guidance sessions attended by a total of 169 students. The office of the counselor was used by others for both individual and group guidance a total of twenty-three times during the year.

CAREER SPEAKERS AND CAREER MATERIALS

Materials

During the school term, all of the guidance files were

checked and filing guides, folders, labels, etc., were prepared.

Free brochures and pamphlets on careers were ordered for the guidance department. The book order for the guidance department was completed after consultation with the librarian, Gladys R. Workman, on the merits of maintaining a special "career corner" in the media center of the school. This area will have all of the books and brochures pertaining to occupations attractively displayed for the students. Books for this purpose were ordered.

Project funds were used to buy audio-visual materials and books for elementary students and for the guidance department at Wayne High School. A Job Experience Kit from Science Research Associates was ordered for Wayne Junior High School and for Wayne High School.

A list of career materials available in the guidance department was duplicated and given to the Wayne High School faculty. In addition a list of the career materials available in the media center were listed with the catalog numbers, duplicated, and given to the faculty.

Speakers

At Wayne High School a club period was scheduled every two weeks. Many of the students did not belong to clubs and had to "sit out" these periods in their last classroom. Career speakers were scheduled for any interested student during this club period time. Some of the careers explored in these talks included an inspirational talk on success in careers followed by talks on X-Ray Technology, electronics, apprenticeship programs, the F.B.I., business schools, beauty schools, the Army, Navy, and Air Force.

This program was not started until late in the school term, and there were a great many occupations students were interested in exploring. These will be scheduled during the next school term.

School Journey Speakers. On Saturday, April 15, 1972, the Women's Auxiliary of the Cabell County Medical Society sponsored a Manpower Health Day for the tri-state high school students at the Cabell-Huntington Hospital. Their purpose was to make students aware of the many health careers in the field of medicine. Nineteen Wayne High students attended this program and listened to speakers discuss their occupations. A tour of the hospital gave the students an opportunity to ask questions about some of the health occupations.

VOCATIONAL GUIDANCE PUBLICITY

Since the Vocational Education Act of 1963, the public has displayed an awareness and support of the need for vocational programs in the public schools. One effective means of reminding the nation of the role of vocational guidance is the annual observance of National Vocational Guidance Week.

National Vocational Guidance Week

On October 24-30, 1971, National Vocational Guidance Week was observed at Wayne High School. With the cooperation of the principal, faculty, and students, the week was publicized in the following manner:

1. D. C. Morris, mayor, signed a letter proclaiming National Vocational Guidance Week in Wayne.
2. The assistant editor of the Wayne County News photographed the mayor and four vocational club officers witnessing the signing of the letter.
3. The picture and story of this event appeared on the front page of the Wayne County News.
4. A reporter for the high school newspaper, The Pioneer, photographed the participants and wrote a story.
5. Each faculty member received a letter from the guidance department stating the purpose of National Vocational Guidance Week. They were asked to discuss with their students the career choices open in their particular teaching field.
6. Jimmy Hale, a business teacher, put up a bulletin board in the central hallway on "Finding a Job."
7. Karen Johnson, FHA officer, used the intercom each morning for a spot announcement on the theme "Turn on . . . Tune in . . . Your Future."

Other Vocational Guidance Publicity

During the school year, the school newspaper and yearbook reporters sought news from the guidance department and helped publicize the current and long-range plans of the department with their stories and pictures. For example there were stories, pictures, or both, on these guidance activities:

1. General Aptitude Test Battery (GATB)

2. Wayne High students boarding the school bus for on-the-job training at the Veterans Administration Hospital
3. An electronics school representative speaking
4. A story about using the Job Experience Kit
5. A picture of the two counselors at the Senior Awards Assembly receiving gifts
6. Orientation Day
7. A story on "Seniors Hear Vocational Talks"
8. Feature story on "Vocational Students Work at Veterans Hospital"
9. A story and picture of two senior art students hanging their framed paintings in the guidance office and in the office of the principal.
10. A story about the new students enrolling and the orientation program for them
11. An interview and story about William L. McMullen, Employment Counselor, from the Employment Opportunity Center
12. A picture and story of a former student discussing his current vocational school training with interested students

ORIENTATION PROGRAMS

Orientation programs were given for transfer students attending Wayne High School for the first time, and for next year's ninth and tenth grade students from the junior high school.

Orientation for Transfer Students

An orientation program was planned for students transferring to Wayne High School from schools other than the junior high school. Two meetings were held in which the students

1. Had get-acquainted games and refreshments.
2. Were given a copy of the school handbook.
3. Received a list of the clubs of the school.
4. Listened to club officers discuss their club.
5. Were given a summary of the multi-track curriculum.
6. Were given time for a question and answer session.

Orientation for Grade 10

The two counselors shared the work division for the orientation programs for the ninth and tenth grades from the junior high school. One counselor planned and directed one of the programs with assistance from the other counselor and vice versa.

An orientation day for students from the junior high, composed of next year's tenth graders at Wayne High School, was held on May 19, 1972.

Orientation for Grade 9

On June 2, 1972, an orientation day was given at Wayne High School for next year's ninth grade students from Wayne Junior High School. With assistance from the principal, the junior and senior high counselors, the faculty, and the students, the orientation plans were as follows:

1. The students were listed according to their curriculum choice.
2. A list of students was made for each teacher assisting with the trial schedules.
3. An orientation kit was given to each teacher and contained these supplies:
   a. The student's list of subjects selected for his schedule
   b. Trial schedule forms
   c. Enrollment cards
   d. Schedules of classes
   e. Curriculum requirement lists
   f. A list of the step-by-step enrollment procedures
4. Teachers were scheduled to enroll students in the different subject areas.
5. Each teacher was assigned a student assistant.
6. The students were divided into four groups and two student guides were assigned to each group.
7. The program schedule was as follows:
   a. Introduction by the principal
   b. A brief description of their clubs was given by club officers
   c. Refreshments
   d. Explanation of guidance department services
   e. Discussion session for students
      (1) One session for the boys
      (2) One session for the girls

f. Tour of the buildings and grounds
g. School cheers taught by the cheerleaders
h. Program by the stage band
i. Lunch
j. Trial Schedules completed
k. Students enrolled in the classes designated on their trial schedules.
l. Completion of enrollment cards
m. Final trial schedule with enrollment cards folded inside were arranged alphabetically and returned to the guidance department.

Career Exploration Unit for Grade 9

A two weeks unit on career exploration was planned and taught in the ninth grade social studies classes at Wayne High School. Byford Osburn, social studies teacher, assisted in the presentation of this unit.

A general outline of the objectives, procedures, resources, and evaluation of this unit is given below.

1. Objectives
   a. To give ninth graders the opportunity to explore a broad occupational area, and to make a tentative career choice based upon the student's abilities, achievements, interests, temperament, and educational plans.
   b. To give ninth graders the opportunity to learn how to use their school and community resources in exploring occupations, and to impress upon them the need to think about the tremendous technological changes of this age and the effect these changes may have upon them in their plans for the future.
   c. To give the ninth graders a general picture of themselves and to use this information to make a tentative curriculum choice.
   d. To use this curriculum choice and plan a course of study for Grades 10, 11, and 12.
2. Procedures
   a. Pre-test with one hundred questions on occupations, knowledge of guidance resources, etc.
   b. Pre-test questions read with correct answers
      (1) Each student given folder with his name
   c. STS Development Series, Grade 9, test profiles returned
      (1) STS Analysis Sheet completed
         (a) A copy of the "Self-Analysis STS Educational Development Series" will be

found in the appendices under Appendix A.

d. Kuder Preference Record, Vocational, Form CH, given
e. Completed profile for the Kuder
f. Used the Job Chart and listed occupations according to each student's highest interest score
g. Completed Kuder Self-Analysis form. A copy of this form will be found in the appendices as Appendix B.
h. Taught use of occupational files in the guidance office
i. Gave the students a list of audio-visual aids in the guidance office and a list of books available in the school media center pertaining to occupations
   (1) Student operators of equipment available in the guidance office
j. Students given an assignment to write their autobiography for their future beginning at least five years from the present time
k. Student exploration of at least one occupational cluster
   (1) Written and oral report
l. Small groups explored the materials available in the guidance office.
m. Students explored occupations in the library, guidance office and their classroom
   (1) Posters on occupations were displayed
   (2) Job Experience Kit was used
n. Students listed speakers for school talks, preferences for school journey visits, and occupations they wanted discussed
o. Multi-track curriculum explained
   (1) Letter to parents asking for parents and students to make a tentative curriculum choice
   (2) Letters of curriculum choice were filed.
p. Post-test given
   (1) Results scored and compared with the pre-test results

3. Resources
   a. Test--STS Educational Development Series, Grade 9
   b. STS Self-Analysis form
   c. Test--Kuder Preference Record, Vocational, Form CH
   d. Kuder Self-Analysis form
   e. Pre- and post-test on occupational knowledge
   f. Kuder Job Charts

g. Sample sheet teaching use of the Occupational Files
h. Tapes, records, filmstrips, records, films, and posters about occupations
i. Job interviews with family, friends, and neighbors by the students
j. Library list of books on occupations
k. Guidance department list of pamphlets, brochures, and books on occupations
l. Chronicle Guidance and SRA occupational files in the guidance office
m. Occupational Outlook Handbook and Occupational Quarterly Guide
n. Catalogs--colleges, technical schools, etc.
o. SRA Job Experience Kit
p. Speakers on occupations

4. Evaluation
   a. Pre- and post-test scores were compared with the results tabulated.
   b. Students came to the guidance office AFTER the conclusion of the unit to continue their exploration of occupations and to use the Job Experience Kit.
   c. The Curriculum Choice letter was filed in the student's school folder with the schedule planned by the student.
   d. A list of the curriculums with each student listed in the curriculum of his choice was made for future use.
   e. A list of the number of students checking out material on a particular occupation was tabulated by the junior and senior high school guidance departments.
   f. A list of the occupations explored via the use of the audio-visual equipment was also tabulated.

TESTS

The Wayne County Schools have a carefully planned program of testing from kindergarten through high school. A variety of other tests are also available to supplement the required tests. At Wayne High School the vocational counselor either administered, planned and supervised the administration, or requested test specialists in particular areas to administer the following series of tests:

The Kuder Preference Record, Vocational, Form CH

This test was given with the assistance of Byford Osburn, social studies teacher, to 119 students in the ninth grade.

STS Educational Development Series, Grade 9

This test was administered by ninth grade teachers to 123 students in the ninth grade. The testing procedure included the following details:

1. A test date was scheduled and the consent of the four test administrators was obtained.
2. A schedule of class changes and room changes with an administrator's test schedule was prepared.
3. A test kit containing all of the supplies needed to administer the test was prepared for each test administrator.
4. A meeting was held with the four test administrators for the purpose of reviewing the directions, etc.
5. After the test was given, each answer sheet was checked for stray marks, light marks, name gridding, etc.
6. Makeup tests were given to absentee students.
7. The tests and materials were returned to the county office.
8. When the test results were later returned to the school, they were used as follows:
   a. The Profile Sheets were returned with an explanation to the students.
   b. The results of the test were used in the career exploration teaching unit.
   c. The total test results were duplicated and given to the faculty to place in their special test notebook.
   d. Faye Stephens, junior high counselor, prepared a graph for all of the ninth graders comparing their achievement with that of the county, state, and nation on this test.
   e. Test labels indicating the individual test results were placed on the test folder of each student.
   f. The E.S.E.A. report of educationally deprived students was prepared and sent to the county office.
   g. The item analysis was given to the faculty for study of their strengths and weaknesses.

STS Educational Development Series, Grade 10

This test was given by members of the faculty to 199 students. The results were utilized exactly as were those listed for Grade 9 with the exception of items 8-b and 8-d.

The Ohio Trade and Industrial Education Achievement Test

This test was given over a period of three days to 37 students. The aptitude section was given the first day, and the achievement sections were given on the two following days. The test covered the following vocational subjects:

1. Carpentry I and Carpentry II
2. Welding I and Welding II
3. Basic Electricity

The test results were utilized by:

1. Having a conference with the principal and teachers of the subjects tested and studying the results
2. Preparing the test results on individual chart forms for each student
3. Returning the test results to the students and discussing the scores
4. Filing the test results for future reference as a job reference source for students and for curriculum improvement

Civil Service Tests

U. S. Civil Service Test. This test was scheduled at Wayne High School for seniors and was given by business teachers and a U. S. Civil Service director.

W. Va. Civil Service Test. This test was given to senior applicants at a test center in Huntington, W. Va.

General Aptitude Test Battery (GATB)

Thirty-seven seniors were given this test at Wayne High School by an employment counselor from the Employment Opportunity Center. Throughout the year other students were referred to the Employment Opportunity Center for this test. The GATB was a prerequisite for many of the postsecondary training programs as well as for apprenticeship applicants.

Gates-MacGinitie Reading Test

When test referrals were made to the guidance department by teachers, this test was administered by the school's remedial reading teacher or by the county supervisor of language arts.

Test results were used to place students in remedial reading classes when this was indicated, or in other classes according to their ability and need. These test results were discussed with the teachers, test administrators, and the students. The results were recorded on the test record of each student.

FBI Employment Test

This test was given to interested seniors by a Federal Bureau of Investigation representative for the purpose of employing seniors. Students were interviewed after the test results were known.

Individual Intelligence Tests

The school psychologist was given student referrals for individual testing. Approximately fourteen test referrals were made by the guidance department. Some of the requests for testing were from the students and some were from the teachers.

The results were used to place students in the Basic Education curriculum when this was requested, or to change the student's schedule when this was indicated.

ON-THE-JOB TRAINING FOR STUDENTS

The Wayne County Schools Advisory Council on Vocational Education was organized to provide advice or information. The council met each month and the members were very interested in the vocational programs offered in the schools. Dr. Lucius L. Powell, Director of the Veterans Administration Hospital in Huntington, W. Va., was a member of this council. His offer to train students in a variety of jobs at the hospital was accepted.

Five senior boys enrolled in the Basic Education Curriculum were scheduled for on-the-job training twice a week in the Food Service, Engineering, and Housekeeping Departments.

Eleven other high school seniors were assimilated into the on-the-job training program and they worked one day each week at the hospital. They worked in the following departments:

Dental Service--One student
Pharmacy --Two students
Radiology --Four students
Switchboard --One student
Ward Clerks --Three students

Evaluation forms were prepared and used as a follow-up on the performance of the students. These forms were checked by the supervisors of the students and then mailed to the high school guidance department. A copy of this evaluation form will be found in the appendices as Appendix C.

VOCATIONAL HANDBOOK FOR WAYNE COUNTY SCHOOLS

A handbook listing the vocational courses offered in the schools of Wayne County was prepared and printed. The vocational counselor prepared this handbook with advice and assistance from the project director and the supervisory staff. A copy of the handbook has been included in this report and will be found in Appendix D.

PROFESSIONAL GROWTH ACTIVITIES OF THE VOCATIONAL COUNSELOR

Part of the continual learning process of any counselor consists of keeping abreast of the latest information in the field of counseling. The focus on career development and the K-12 program has made it mandatory for counselors to study other programs and learn from them which elements in the program can be applied in their own school.

Possession of current literature on the latest counseling developments was a necessity, and the vocational counselor was a member of the following professional organizations:

1. West Virginia Education Association and National Education Association
2. American Personnel and Guidance Association
3. American School Counselor Association
4. American Vocational Association
5. W. Va. Vocational Association
6. W. Va. Personnel and Guidance Association

Activities that were particularly beneficial were these:

1. Listening to a description of the Appalachia Educational Laboratory Career Decision-Making Project given by David Winefordner at the WVEA luncheon for guidance personnel
2. Visiting schools in Cobb and Forsythe counties in Georgia with the Fort Gay-Thompson Community Council for Career Development (EPDA) group
3. Attending a Business, Office and Distributive Education conference at Cedar Lakes
4. Attending the Fifth Vocational Guidance Workshop at Cedar Lakes and listening to speakers discuss career education
5. Attending a Career Education Institute for one week under the direction of Dr. LeVene A. (Lee) Olson from Marshall University

POSTSECONDARY VOCATIONAL EDUCATION AND JOB PLACEMENT

Many of the non-college bound Wayne High graduates sought permanent employment, summer employment, or further training after their graduation. These students were assisted in their plans in several ways. The methods used to help are discussed below.

West Virginia Department of Employment Security

Six agencies within this department worked with the guidance department and helped the students continue their vocational training or assisted them in finding employment.

Employment Opportunity Center. William L. McMullen, Employment Counselor, interviewed 111 non-college bound seniors at Wayne High School. Prior to these group guidance sessions, the vocational counselor assisted by:

1. Announcing and scheduling the first visit and talk
2. Taking a senior survey and compiling the information for use throughout the year
   a. Senior requests for financial aid, job placecareer counseling, etc.
3. Compiling a list of the seniors for interviewing and individual counseling
4. Providing an office in the guidance department for these interviews

5. Scheduling a time and place for the GATB to be administered
   a. Referring of other students to the Employment Opportunity Center to take the GATB
6. Completing the information needed on the file cards of the Center for the 111 seniors.
7. Preparing a dropout list for the Center to follow up

In the spring both school counselors worked together in interviewing eligible seniors and preparing a list for summer employment. Twenty-six students were referred for this employment, and six were hired by the U. S. Corps of Engineers. Three students were accepted for training in a U. S. Department of Labor Jobs Program although only one followed through with the training.

The Employment Opportunity Center had not been advised of the amount of MDTA funding it would receive for aiding disadvantaged students at the time of this report.

West Virginia Rehabilitation Division. Vocational Rehabilitation Counselor, William M. Carey, was invited to meet with eighteen seniors. The program was explained and three seniors applied. These three seniors did not follow through with their physical examination and did not receive aid. One Wayne High senior received aid during the 1971-72 school term.

Vocational Services for the Blind and Visually Impaired. One student was referred to Donald Chumley, Counselor, for assistance and he was scheduled for eye surgery. One other student was assisted by this department during the school term.

Work Incentive Program (WIN). Sam Perry, Supervisor of the Wayne WIN team, interviewed twenty students referred by the guidance department for WIN training services. The guidance department assisted in the enrollment of eligible seniors by:

1. Meeting with the supervisor and discussing the program and the procedures to be followed
2. Interviewing and listing eligible seniors for the WIN supervisor to enroll
3. Preparing transcripts, etc., for the students who were enrolled
4. Providing a guidance office for the WIN team to use during their interviews with the seniors
5. Attending the orientation program at the WIN office

A follow-up of the twelve students who enrolled in the WIN program showed that seven students completed the orientation program and were enrolled in the type of school listed below:

1. Air-conditioning and refrigeration--one student
2. Barber --one student
3. Beauty culture --two students
4. Heavy-duty equipment operator --one student
5. Licensed practical nurse --two students

Three students dropped out of the program to get married and one student moved to another state. The reason for the fourth dropout was unknown but a follow-up visit was planned by WIN.

Neighborhood Youth Corps. The Employment Opportunity Center and the Wayne County Board of Education cooperated in sending their personnel to Wayne High School to enroll applicants for summer jobs under the U. S. Department of Labor's program to aid disadvantaged high school students. The principal of the high school accepted applications for NYC summer employment, and the students were interviewed over a two-day period in the guidance department. In Wayne County two hundred and fifty students were employed for summer work in the NYC program administered by the Wayne County Board of Education.

Apprenticeships

Nine seniors applied for apprenticeship training with the Huntington Sheet Metal Workers Joint Apprenticeship Committee. Sixteen seniors applied for apprenticship training with the Huntington Joint Electrical Apprenticeship Committee, and four applicants applied for training with the Plumbers and Fitters in the Huntington area. One student applied and was accepted as an apprentice painter.

These students were assisted by:

1. Giving them announcements and specific directions on how to apply
2. Inviting Charles A. Spurlock, Operation Manpower Project, Regional Educational Coordinator, AFL-CIO Appalachian Council, to speak on the apprenticeship program
3. The vocational counselor visiting the business managers of the local labor organizations and one chairman of a Joint-Apprenticeship Committee

4. Making grade transcripts and verifying their educational status

At the time of this report selections for apprenticeship training had not been made with the exception of the apprentice painter.

Other Postsecondary Training

Wayne High School students were accepted or were enrolled in a variety of postsecondary training schools. Some of these schools are mentioned below.

X-Ray Technology. Nine students applied for admission for training at Saint Mary's Hospital and Cabell-Huntington Hospital in Huntington, West Virginia. These students were assisted by

1. Group guidance sessions
2. A speaker from one of the training schools
3. Securing applications and making transcripts
4. Referrals for the GATB as needed

One Wayne High senior was selected for training by Saint Mary's Hospital School of X-Ray Technology out of the ten chosen by the hospital. Cabell-Huntington discontinued its program.

Electronics. Representatives of two schools and a 1971 Wayne High graduate, enrolled in an electronics school, discussed this occupation. Seven graduates enrolled in a two-year electronics training program.

Licensed Practical Nurse. A full scholarship was obtained for one student accepted for training as an LPN by the Cabell County Public Schools Career Center. Two students planned to receive their training at Louisa, Kentucky, under the WIN program.

Business Schools. One student was accepted under the school's MDTA program, and one was enrolled under the WIN program but dropped out to marry. One other senior enrolled in a business school for further training.

Schools of Beauty Culture. Four students enrolled in this training program. A full scholarship was obtained

for one student, and two others were enrolled under the auspices of the WIN program.

Barber School. One student was accepted for training under the WIN program and was also given a partial scholarship.

Federal Bureau of Investigation. As a result of the tests and interviews given at the school by an FBI representative, seven students were offered employment in Washington, D. C., and two accepted the offer.

Senior Follow-Up, June 30, 1972

Seniors graduating from Wayne High School on May 30, 1972, had found or had been helped to find permanent or summer employment. Some had enrolled for postgraduate training, and some had enrolled in college.

Out of a class of 135 seniors who graduated, 42 were employed one month after graduation. Thirty were enrolled in post-secondary training, and 29 students had been accepted by a college. Eighteen had married and were not interested in further training or employment. Only 27 out of the 135 were seeking work or were working but had not notified the guidance department of their employment. Of the 27 students who were not in school or were not employed only 12 were former vocational students.

Two students who did not graduate were enrolled in summer school to complete their graduation requirements. One planned to attend college and one had a job waiting. One other student who did not graduate was referred to the WIN program and was enrolled for training as a beautician.

The severe economic situation with the resulting high unemployment for the tri-state area made it difficult for some of the students to find immediate employment. However, the overall employment or postsecondary training picture for the graduates was very good as indicated by the figures cited above.

Chapter 4

AN EVALUATION OF THE EXEMPLARY PROJECT

The project proposal listed six objectives with an evaluation designed for each of these objectives. The objectives were planned for both immediate and long-range results. Consequently, an evaluation must present both the plans that were fulfilled along with other plans that will be fulfilled at a future time. The six objectives and the evaluation for each one follows.

1. Objective. To make students in the elementary grades more aware of vocational possibilities.

This objective was to be measured by teacher observations and perceptions of student awareness in regard to the program and activities which have been incorporated at the elementary level.

As specified in the proposal, the duties of the counselor in this project were to be limited to providing materials for a career awareness program in the elementary grades. This was done by providing a list of current career development materials for elementary students, and ordering those selected by an elementary supervisor.

In order to study what other schools had done in developing a career awareness program the counselor and an elementary supervisor visited schools in Cobb and Forsythe Counties in Georgia. This trip was made with the Fort Gay-Thompson Community Council for Career Development group. In addition A Career Education Institute taught by Dr. LeVene A. (Lee) Olson from Marshall University was attended for one week.

Plans were in progress to provide an in-service training program for elementary teachers in order to make students in the elementary grades more aware of vocational possibilities.

2. Objective. To provide additional information to all junior high school students concerning occupational information and to aid in the improvement of exploration courses provided.

This objective was to be measured by determining whether additional information was provided to junior high school students and if exploratory courses were improved as measured by student and teacher reactions to a survey instrument to be developed and administered at the conclusion of the school year.

Additional information concerning occupational information was provided by asking the Wayne Junior High School counselor for a list of materials to be ordered. A Job Experience Kit was ordered for this school.

The teaching of the career exploration unit was improved by visiting the counselor at the junior high school and discussing the two units to be prepared and taught by the two counselors. An outline of the career exploration unit prepared for Wayne High School was given on pages 14 to 16 of this report.

The survey instrument used to measure the effectiveness of the career information provided in the career exploration units was a written career monograph by each student, and a vocational survey tabulation by the junior and senior high counselors.

In the ninth grade Wayne Junior High School students explored 95 occupations, and Wayne High School ninth grade students explored 160 occupations. During the teaching of the career exploration unit, ninth grade students at Wayne High used the Job Experience Kit 41 times, listened to tapes on occupations 17 times, used 5 filmstrips on occupations, and listened to 2 records on occupations.

In addition the Wayne County Board of Education employed two new teachers to increase the number of exploratory courses at Wayne Junior High School.

3. Objective. To develop the student's knowledge of the guidance resources of his school and community.

This objective was to be measured by the student being able to identify and describe the guidance resources available in his school and community, and the degree to which he utilized such resources.

The evaluation instrument used to measure the development of the student's knowledge of the guidance resources of his school and community was a pre- and post-test on this information given during the teaching of the career exploration unit. Table 3 on page 28 summarizes the results of this test and indicates that out of the 119

Table 3

A Summary of the Pre- and Post-Knowledge Test on Guidance Resources

Classes	Number of Students	Number Whose Scores Increased	Number Whose Scores Decreased	Same Scores	Tests Missed	
					One	Both
1	27	14	3	1	8	1
2	34	21	2	1	9	1
3	36	26	2	0	8	0
4	22	15	2	0	5	0
Totals	119	76	9	2	30	2
Percentage		64%	7%	2%	25%	2%

students taking both tests 64 percent increased their scores on the post-test, 7 percent had a decrease in their scores, and 2 percent made the same score. The scores were not counted for 27 percent of the students because they missed one or both of the tests.

Students in the ninth grade were tuaght how to use the school and community facilities available to them in learning about the world of work. This was taught in the career exploration unit described on pages 14-16 of this report.

4. Objective. To provide counseling to students concerning vocational curriculum and to aid in choosing vocational courses consistent with the students interest and ability.

This objective was to be measured by the number of individual and group counseling interviews conducted by the counselor and responses of the students enrolling in vocational programs to instruments designed to evaluate the effectiveness of the vocational guidance program.

The vocational counselor met individually with 420 students for a total of 971 sessions, and the counselor met with a total of 169 students in 19 group sessions. This was summarized on page 9 of this report.

Two senior survey forms were used--one at the beginning of school and one at the end of school. Tabulated lists were made of the students requesting career counseling, job placement, financial assistance, etc. These students were counseled throughout the school year and their requests were fulfilled when this was possible. At the end of the school year a senior survey form was used to ascertain the plans of the students after graduation. Students needing assistance in their plans were given this assistance when possible by the counselor. The effectiveness of the guidance department in meeting the requests for job placement or postsecondary training help for seniors was summarized on page 25 in the senior follow-up given in this report.

Counseling concerning vocational choice in either the curriculum or school courses was provided at all of the four grade levels. Students in Grade 9 were given a specific course in career exploration. The curriculum choice was made by the student and his parents during the ninth grade. The STS Educational Development test for Grade 9 and the Kuder Preference Record, Vocational, Form CH were used to aid ninth graders in formulating plans for a tentative curriculum choice. Schedules were then planned with the students according to their curriculum choice.

Grade 10 English students explored occupations by using the facilities of the guidance department and the library. All of the tenth grade students' grade scores were checked prior to the end of the first semester. Those in need of immediate counseling were interviewed, schedules prepared, and in some cases curriculum changes were made.

There were 59 vocational students enrolled in Grade 11, and each of these 59 students was counseled prior to the spring enrollment for his senior year. The records of the student were carefully checked, the vocational requirements discussed and checked, and a trial schedule was completed and filed.

Grade 12 vocational students were given individual and group guidance throughout the year. The emphasis for this grade was on job placement or further training.

5. Objective. To provide placement services for vocational students in cooperation with the West Virginia Employment Security Department and other agencies.

This objective was to be measured by the number of students actually placed in jobs through referrals and placements made by the vocational counselor.

The extent of the cooperation between the vocational counselor and the W. Va. Department of Employment Security was discussed fully in this report on pages 21-23.

Although the vocational counselor was asked to aid in the placement of vocational students only, an attempt was made to help ANY senior requesting job placement assistance. One month after graduation all but 12 of the 48 vocational students were employed, enrolled in postsecondary schools, or married and not seeking employment. A summary of the whole senior class follow-up on job placement was given in this report on page 25.

6. Objective. To provide county supervisory personnel with information concerning vocational curriculum revision.

A booklet descriptive of vocational programs offered in the county was to be prepared and made available to administrative and supervisory staff, parents and students.

A Wayne County Schools Vocational Handbook was prepared to meet this objective, and a copy will be found in Appendix D.

Chapter 5

RECOMMENDATIONS

The exemplary project was planned to make students in the elementary grades more aware of vocational possibilities, to provide additional information to all junior high school students concerning occupational information and to aid in improving exploration courses, to develop the student's knowledge of guidance resources in his school and community, to provide counseling about the vocational curriculum and to aid in choosing vocational courses, to provide placement for vocational students, and to prepare a booklet descriptive of the vocational programs offered in the county.

This was a broad and admirable concept in planning a career development program from the elementary to the high school level. As stated in the proposal, the vocational counselor was to merely assist in some of the planned objectives while placing the major emphasis on the full-time counseling position at the high school. Add to these duties those of preparing and teaching the ninth grade career exploration unit, and the happily assumed task of supervising the on-the-job training program at the Veterans Administration Hospital.

For those planning a similar project the following recommendations are made:

1. A secondary school similar to Wayne High School and with a comparable enrollment needs a vocational counselor.
2. The duties of the vocational counselor should be confined to one school.
3. The placement of seniors is of paramount importance and should be one of the primary concerns of every counselor. Since placement is so important, it should be the job of a qualified placement director working full-time. In Wayne County a placement director could serve the seniors graduating from <u>all</u> of the high schools.

APPENDICES

APPENDIX A

E _____ GRADE _____ DATE _____

SELF-ANALYSIS
STS EDUCATIONAL DEVELOPMENT SERIES

YOUR INTERESTS

A. Career Plans: 1. _____
2. _____

B. Educational Plans: _____

C. My favorite subjects are:
1.
2.
3.
4.
5.

D. I dislike these subjects:
1.
2.
3.
4.
5.

1. Do my career plans match my education plans? _____
2. Do I need to change my education plans? _____
3. What school subjects will help me in achieving my career plans?
a. _____
b. _____
c. _____
d. _____
e. _____
4. Are these helpful subjects listed among my favorite school subjects? _____
5. If not, are any of them listed among the subjects I dislike? _____
6. Do I need to think some more about my career plans as they relate to these useful school subjects?

YOUR ABILITIES

A. Your Non-Verbal Ability Grade Score _____

B. Your Verbal Ability Grade Score _____

7. Was my ability to solve problems using different kinds of pictures (non-verbal) above average, average, or below average? _____
8. Was my ability to solve problems using different kinds of words above average, average, or below average? _____
9. Which of these abilities will I need most in my career choice? _____

YOUR ACHIEVEMENT SCORES

A. Language Studies
1. Reading Grade Score _____
2. English Grade Score _____

B. Technical Studies
1. Mathematics Grade Score _____
2. Science Grade Score _____

C. Social Studies
1. The U.S.A. Grade Score _____
2. Solving Everyday Problems Grade Score _____

10. Check Question No. 3 above and then note the grade score you achieved on the subjects you listed. Is your achievement score above average, average, or below average in the subjects you will use in your career choice? _____
11. Did you score higher in your achievement grade scores on your favorite subjects? _____

. BATTERY COMPOSITE GRADE SCORE _____

(This is the total score of the two ability tests and the six achievement tests.)

12. If you scored above the national average on the Battery Composite, you and your parents should know that you are the kind of student who could do well in college -- if you decide that you want to go to college.

APPENDIX B

ME _____ GRADE _____ DATE _____

SELF-ANALYSIS
THE KUDER PREFERENCE RECORD
VOCATIONAL--FORM CH

. THE JOB CHART

A. PURPOSE--To help identify the most suitable occupations on the basis of the Kuder Form C preferences.

B. PLEASE REMEMBER the Kuder scores are classifications of your INTERESTS and are intended to help you predict what you would enjoy doing. The scores DO NOT predict what you should do or what you are able to do.

. HOW TO USE THE JOB CHART

A. Look at your Kuder Profile sheet.
   1. List the scores that are above the 75th percentile.
      a. _____
      b. _____
      c. _____
      d. _____

B. Directions are given below for the next step, according to the number of high scores.
   1. One high score
      Look up the number of the scale (0 through 9) in the Job Chart to find the list of suggested occupations. List these occupations.

1.	6.	11.
2.	7.	12.
3.	8.	13.
4.	9.	14.
5.	10.	15.

   2. Two high scores
      Combine the numbers of the two high scales, putting the smaller number first. Example: Outdoor and Scientific. Combine the numbers for 03. Look up this number. Next, look up the 0 and the 3 separately. List these occupations.

1.	6.	11.
2.	7.	12.
3.	8.	13.
4.	9.	14.
5.	10.	15.

   3. More than two high scores
      If there are three or more high scores, combine the scale numbers into pairs, placing the smaller number in each pair first. Look up the pairs and then look up each number separately. Example: High score numbers are 3, 6, and 8. The pairs would be 36, 38 and 68. Look up these occupations. Now look up the occupations under 3, 6, and 8.

1.	6.	11.
2.	7.	12.
3.	8.	13.
4.	9.	14.
5.	10.	15.

4. No high scores

If there are no high scores above the 75th percentile, check the 65th percentile. If all of the scores are near the median, it is possible that the person, has no exceptional interests relative to the national norm group. (The student may also have filled out the blank carelessly or without understanding. Check the V-Score.

C. Use of Occupational list obtained from the Job Chart.

1. Your list may be expanded by using the Dictionary of Occupational Titles. (D.O.T.)
2. Your list may be narrowed for intensive study.
3. Consider the low scores on the Kuder.
   a. Do you have a low interest score on the Kuder? _____
   b. Does the low interest score relate to either of the two career choices you made on your STS Development Series? _____
   c. If the answer to the last question is yes, shouldn't you change your occupational choice for one or more you would like? _____
4. Use your list of occupations from the Job Chart and check yourself on these points:
   a. Am I willing to be an active participant in the occupations I am interested in at this time? Example: I may appreciate music and art. Am I willing to be active in either? _____
   b. Consider your abilities and your achievements as we did with the STS DEVELOPMENT SERIES and eliminate those occupations that are not right for you. Mark them out on your list.

5. Now you are ready to begin your career exploration with a list of occupations that interest you. You may want to choose one or more to explore in detail.

STUDENT'S NOTES OR COMMENTS:

APPENDIX C

STUDENT EVALUATION FORM

NAME_____ DATE_____

SOCIAL RESPONSIBILITIES

Please check the term which you think best describes the student's social responsibilities and work habits.

		Excellent	Good	Fair	Poor	Unacceptable
1.	Is cooperative	___	___	___	___	___
2.	Is courteous	___	___	___	___	___
3.	Accepts suggestions for improvement	___	___	___	___	___
4.	Exercises self-control	___	___	___	___	___
5.	Shows self-confidence	___	___	___	___	___
6.	Accepts responsibility	___	___	___	___	___
7.	Gets along well with others	___	___	___	___	___
8.	Understands and observes safety rules	___	___	___	___	___
9.	Respects property rights	___	___	___	___	___
10.	Is punctual	___	___	___	___	___

WORK HABITS

1.	Makes good use of time	___	___	___	___	___
2.	Follows directions	___	___	___	___	___
3.	Works independently	___	___	___	___	___
4.	Listens attentively	___	___	___	___	___
5.	Does a good job	___	___	___	___	___
6.	Uses materials or equipment properly	___	___	___	___	___
7.	Is thorough in his work	___	___	___	___	___
8.	Completes job assignments on time	___	___	___	___	___

COMMENTS: _____

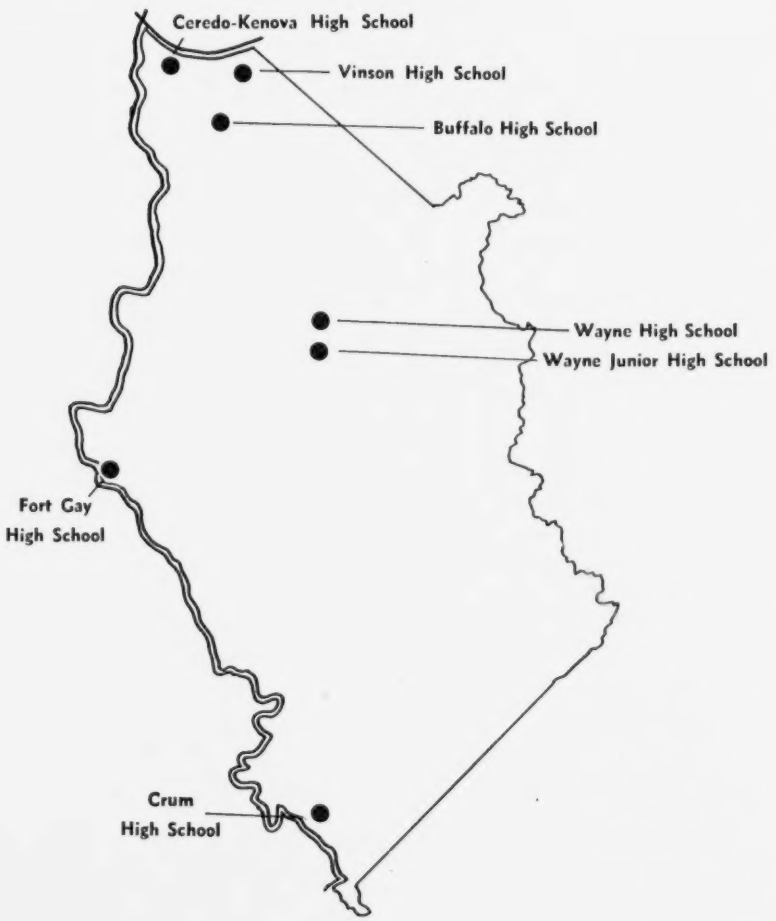
APPENDIX D

WAYNE COUNTY SCHOOLS VOCATIONAL HANDBOOK

WAYNE
COUNTY SCHOOLS

VOCATIONAL PROGRAMS

WAYNE, WEST VIRGINIA



WAYNE COUNTY SCHOOLS
VOCATIONAL PROGRAMS

prepared under
the
direction of

SAMUEL D. HUBBARD, Superintendent of Schools
HENRY A. RAY, Assistant Superintendent of Schools
H. GLENN FOGLE, Supervisor, Vocational Education
HELEN K. MATTHEWS, Supervisor, Guidance

by

MAXINE W. PERDUE, Vocational Counselor, Wayne High School

(Part of an Exemplary Project in Vocational Education for the West Virginia State Board of Education, Division of Vocational Education)

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FOREWORD

Vocational programs in agriculture and home economics were started shortly after the passage of federal legislation that made such programs possible. Trade and industry or vocational industrial programs were started but were short lived until the last five years. Business education programs became vocational after the Vocational Education Act of 1963 included them.

Since the main purpose of vocational education is to prepare the students for gainful employment, most students who do not plan to enroll in college should complete a vocational program.

The age in which we live is characterized by technological advances that are unparalleled in the history of mankind. It is, therefore, more important than ever that each person in our society be able to function at a level near the upper limit of his individual capabilities and that learning continues throughout his lifetime.

H. Glenn Fogle

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and	
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BOARD OF EDUCATION

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Dr. Fred H. Brown
Paul E. Hutchison
Fredrick C. Long
Lawrence W. Morrison

WAYNE COUNTY SCHOOLS STAFF

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Henry A. Ray, Assistant Superintendent and Director of Instruction
Mose A. Napier ..... Assistant Superintendent
Milburn Nolan ..... Assistant Director of Instruction

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Edward L. Farley ..... Ceredo-Kenova High School
E. J. A. Maynard ..... Crum High School
Joseph A. Wellman ..... Fort Gay High School
John Oshel ..... Vinson High School
Paul N. Fulks ..... Wayne High School
Henry Cremeans ..... Wayne Junior High School

ADULT EDUCATION

The Wayne County Board of Education endeavors to offer a broad range of Adult Vocational Education classes to all interested adults in Wayne County.

Preparatory courses are available for the unemployed and underemployed. Courses are also available to those persons presently employed who desire to upgrade their skills.

ADVISORY COMMITTEE

The Advisory Committee is composed of interested citizens and representatives of area business and labor relations. The function of this group is to act in an advisory capacity to the Wayne County Board of Education and to the administrative staff. The committee members are:

David Blatt
Denvil F. Chandler
Richard Evans
Simpson Griffith
James P. Hamer
James McClure
Roger McKenzie
John Peters
James Pinson
Dr. Lucius L. Powell
Kenneth E. Simmons

HOW TO ENROLL IN THE COURSES

If you are interested in any of the courses listed, talk to your counselor or to the teacher of the course. Either of them will give you specific information and answer any questions you may have pertaining to the contents of the course, your eligibility for enrollment, and how to enroll.

There are some introductory courses such as General Business, Vocational Agriculture I, Home Economics I, and Industrial Arts. These are provided in the ninth grade at some of the schools.

VOCATIONAL CLUBS AND ORGANIZATIONS

Students are encouraged to affiliate with the national organization formed for their particular occupational area. There are four of these clubs currently available to interested students in the high schools of Wayne County.

F.B.L.A.
Future Business Leaders of America

F.F.A.
Future Farmers of America

F.H.A.
Future Homemakers of America

V.I.C.A.
Vocational Industrial Clubs of America

AGRICULTURE

Vocational Agriculture is a program designed to help train students for careers in agriculture, agri-business, or off-farm agriculture. The program also serves as an enrichment for students seeking training in vocational-technical agriculture courses and professional agriculture schools.

Areas of instruction include **basics** for agriculture, production, supplies, mechanics, products, ornamental horticulture, conservation, forestry, business, processing, services, and professional agriculture careers.

Programs are provided at Buffalo, Fort Gay, and Wayne High Schools.

AGRICULTURE

NATURE OF THE WORK

The professional and technical vocations in agriculture usually require college training although some may be learned on the job. These occupations in agriculture are numerous and varied.

Farm service jobs include herd testing, artificial breeding, livestock marketing, saw milling, pulpwood harvesting, farm machinery custom work, feed mixing, and fertilizer and lime distribution.

Gainful employment after graduation may be sought in farming, agricultural mechanics, agricultural sales and services, greenhouses, nurseries, animal and crop processing, conservation, forestry, and animal health.

MAJOR UNITS OF STUDY

Vocational Agriculture I, II, and III

Agriculture Mechanics I and II

EMPLOYMENT OUTLOOK

While the number of farms is shrinking, the number of jobs in farm-related industries is not. Industry has a need for young people with a farm background to help supply the products and services needed by the farms.

AUTO SERVICING
and
AUTO MECHANICS

NATURE OF THE WORK

The automobile mechanics job consists of repairing automobiles, locating the cause of breakdowns, and performing preventive maintenance. In locating and diagnosing the trouble with a motor the mechanic may use visual inspection, listen to the motor, drive the car, or use a variety of testing equipment. The tools used to make repairs may range from the simplest of handtools to the most sophisticated and expensive of machines.

Most mechanics are able to make a variety of repairs to automobiles. Some become specialists in repairing a particular part of the automobile.

MAJOR UNITS OF STUDY FOR AUTO SERVICING

Minor tune-up
Balance tires
Replace shock absorbers
Lubricate and change oil and filter
Change, rotate, and repair tires
Replace brake lining and repair or replace wheels and master cylinder
Check and replace batteries
Wash, wax, and clean upholstery
Make parts orders, and greet and meet customers
Practice and follow safety procedures

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MAJOR UNITS OF STUDY FOR AUTO MECHANICS

Major tune-up (Carburetor repairs)
Automatic and standard transmission repairs
Major engine repairs
Wheel alignment
Differential repairs
Air-conditioning service and repair

EMPLOYMENT OUTLOOK

The employment of automobile mechanics during the 1970's is expected to increase moderately due to the rising number of automobiles and the extra maintenance required to maintain the luxury equipment on these automobiles.

BUSINESS EDUCATION

Clerical workers keep records, do the paperwork required in offices, send and receive merchandise, handle communications by telephone, mail, telegraph, or messenger services, and use cash registers in restaurants and stores.

The majority of clerical workers are employed as secretaries and stenographers, bookkeepers, typists, cashiers, telephone operators, shipping and receiving clerks, office machine operators, postal clerks, mail carriers, receptionists, and bank tellers.

The Vocational Business Education program in Wayne County offers three major program sequences: Bookkeeping-Accounting, General Clerical, and Stenographic-Secretarial. Some of the high schools provide only one, some two, and some all three of these programs.

BOOKKEEPING

NATURE OF THE WORK

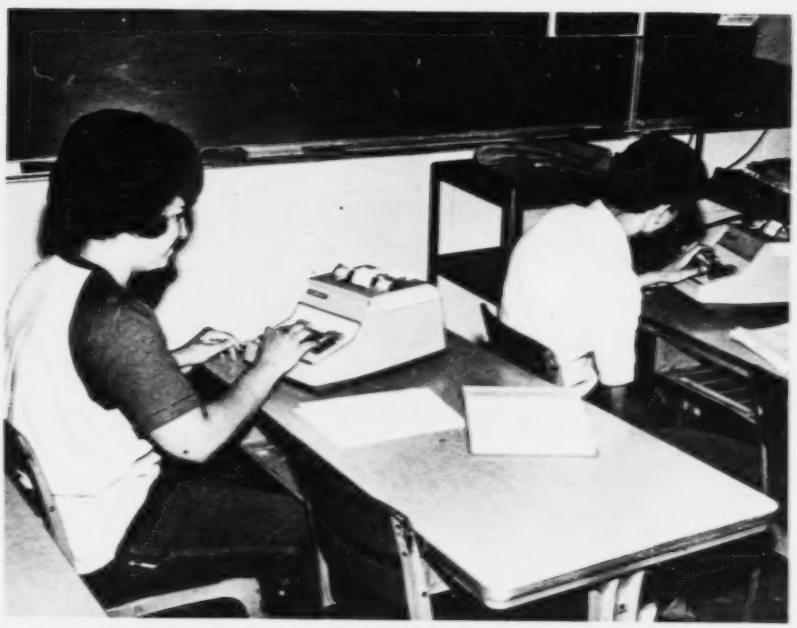
Maintaining a systematic and up-to-date record of the financial affairs of a business is the job of the bookkeeper. The duties of the bookkeeper will vary according to the size of the place of employment. In a small establishment the bookkeeper will be expected to keep a complete set of books in addition to doing general office work. In a large bookkeeping department, the duties may be divided so that one bookkeeper has charge of only one section of the records.

MAJOR UNITS OF STUDY

General Business
Typewriting I
Business English
Business Math
Bookkeeping I and II
Office Practice
Electives: Economics
Business Law

EMPLOYMENT OUTLOOK

The number of bookkeeping workers is expected to increase moderately through the 1970's with more than 75,000 openings for new jobs each year.



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GENERAL CLERICAL

NATURE OF THE WORK

Beginning typists may address envelopes, type drafts, type headings on form letters, and do routine office work. Standard business machines such as the adding machine, postage machine, duplicator, desk calculator, and typewriter may be used. The general office clerk may use the telephone as a part of the job requirement along with a wide variety of miscellaneous duties.

MAJOR UNITS OF STUDY

General Business
Typewriting I and II
Bookkeeping I
Office Practice
Business English
Business Electives

EMPLOYMENT OUTLOOK

The employment outlook for typists is expected to be very good with abo[illegible]0 new job openings occurring yearly through the 1970's.

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STENOGRAPHIC-SECRETARIAL

NATURE OF THE WORK

Stenographers take dictation and transcribe their notes on a typewriter. Most stenographers use shorthand for this while the remainder use machines. Stenographers do general clerical duties in addition to transcribing their notes.

Secretaries do stenographic work and, in addition, relieve their employer of a variety of business duties which they handle on their own initiative. Sometimes they supervise other clerical personnel; and sometimes they specialize in legal, medical, or other technical work.

MAJOR UNITS OF STUDY

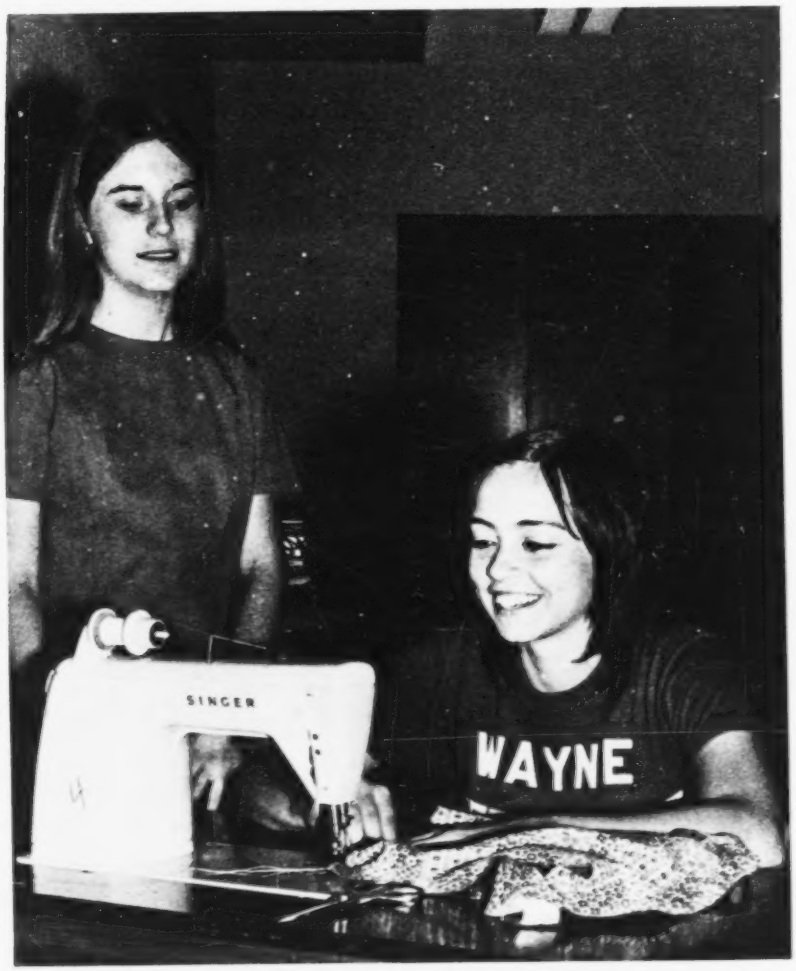
Business English
General Business
Typewriting I and II
Shorthand I and II
Office Practice
Business Electives

EMPLOYMENT OUTLOOK

The prospects for employment opportunities are expected to be very good through the 1970's with annual openings for 230,000 stenographers and secretaries.

CONSUMER AND HOMEMAKING

All six high schools and Wayne Junior High School have Consumer and Homemaking programs. Wage Earning Classes are provided at Wayne High School.



NURSING AIDE TRAINING

Hospital attendants are members of the nursing team. In the performance of their many duties they assist and are supervised by registered and licensed practical nurses. Women employed as hospital attendants are usually called nursing aides, and men may be referred to as orderlies.

Some of the tasks performed by nursing aides are serving meals, delivering messages, answering patients' bell calls, feeding patients, making beds, bathing or dressing patients, taking temperatures, and assisting patients in walking.

MAJOR UNITS OF STUDY

Introduction to patient care
Foods and fluids
Comfort and safety measures
TPR's (Temperature-Pulse-Respiration)
Care of hospital equipment
Moving patients
Morning and evening care

EMPLOYMENT OUTLOOK

The employment of hospital attendants is expected to increase very rapidly through the 1970's. Most new jobs will be in hospitals; but many openings will occur in nursing homes, convalescent homes, and other long-term care facilities.

POWER SEWING MACHINE OPERATION

NATURE OF THE WORK

Operating a power sewing machine is a highly skilled and diversified job. Each clothing plant has many different machines designed to do a particular job. Each operator performs the same job each day. With experience the worker's skill increases and in turn increases the daily job performance and the wages earned.

MAJOR UNITS OF STUDY

Machine parts
Threading the machine and the bobbin
Cleaning the machine
Sewing machine control
Stitching exercises
Dexterity exercises

EMPLOYMENT OUTLOOK

Employment in the apparel industry is expected to increase moderately through the 1970's. There are four apparel industries located in the tri-state area. Most employment opportunities will be in sewing machine operator jobs.

SHORT ORDER COOKING

NATURE OF THE WORK

The size and type of restaurant will determine the type of cook needed. Short order cooks usually work in small restaurants with a cook and one or two kitchen helpers. The cook, aided by the short order cook, prepares all of the food that is served. The food will consist of dishes prepared on a short order basis along with baked goods purchased from a bakery.

MAJOR UNITS OF STUDY

Introduction to the food service industry
Functions of a food service operator
Use and care of restaurant equipment
Practical training using a variety of foods and techniques

EMPLOYMENT OUTLOOK

This occupation is expected to offer excellent opportunities for employment as cooks and chefs during the 1970's. Small restaurants and eating places with simple food preparation and service will offer the greatest employment opportunities for starting jobs as cooks.

WAITRESS TRAINING

NATURE OF THE WORK

Waitresses take customers' orders, serve food and beverages, make out customers' checks, and sometimes take payment for the order. If the waitress works in a small place emphasizing quick service, she may also set up and clear tables, return dishes to the kitchen and perform other tasks. If the restaurant is large with more formal meal service, the waitress will devote almost all of her time to taking guests' orders and seeing that meals are served properly.

MAJOR UNITS OF STUDY

Role of the waitress in meeting the employer's objectives
Qualifications for a successful waitress
Working in different types of restaurants
Responsibilities of a waitress
Practical training

EMPLOYMENT OUTLOOK

The employment opportunities for waitresses are expected to be good during the 1970's. In addition to the vacancies that will occur from retirement, death, etc., other jobs will be created to staff the increasing number of eating places needed to meet the needs of a growing population.

DRAFTING

NATURE OF THE WORK

The training in this program includes drafting, surveying, and road construction testing. Draftsmen translate the ideas, calculations, specifications, or rough sketches of others into working plans which will then be used to make a product. Students with only high school drafting usually start on the job as tracers.

In the professional areas are the draftsman, surveyor, laboratory supervisor and civil engineer. Gainful employment for the high school graduate may be sought as a rod man, drafting technician, surveyor's helper, highway engineer's aide, or a salesman in equipment or material in industry.

MAJOR UNITS OF STUDY

Architectural drafting
Mechanical drafting
Structural drafting
Electrical drafting
Surveying

EMPLOYMENT OUTLOOK

The employment opportunities for draftsmen are expected to be favorable through the 1970's especially for those with post-high school training.

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INDUSTRIAL

Workers in the building trades are employed in the building, repair, maintenance, and alteration of homes and other types of buildings. They are also employed in the construction of airports, highways, U. S. missile and space programs, and other construction projects. The programs in the high schools of Wayne County are provided to train students for entry level jobs.

Crum and Wayne High Schools provide programs in building construction and building maintenance. Wayne High School has a program in plumbing and wiring. Fort Gay High School and Wayne both provide programs in metal fabrication.

BUILDING CONSTRUCTION

NATURE OF THE WORK

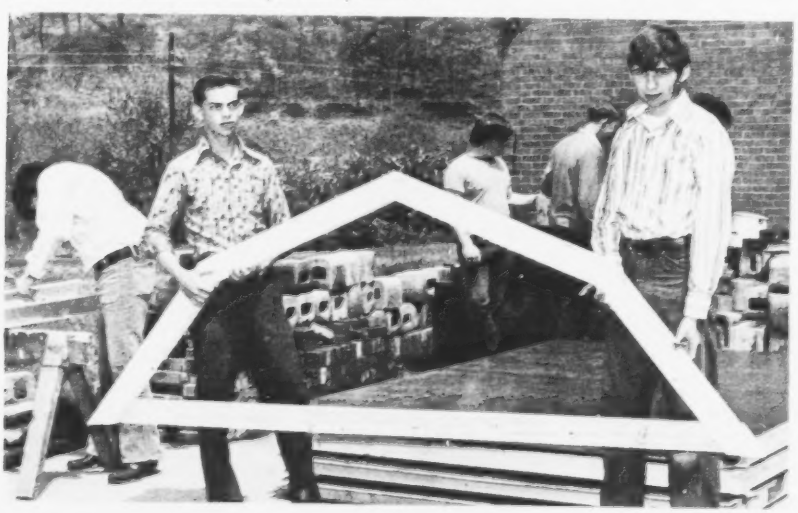
Building construction workers use lumber, stone, brick, cement, concrete, and other materials to build residences, commercial and public buildings, and other types of structures. The purpose of the programs at Crum and Wayne High Schools is to provide the essential skills, attitudes, appreciation, and knowledge necessary for successful entry and advancement in the building construction field.

MAJOR UNITS OF STUDY

The major units of study are: hand tools, power tools, blue print reading and making working sketches, performing all of the assignments of constructing a five-room house, **i.e.,** masonry, brick and block laying, concrete forms and placing and finishing concrete, layout, framing, outside and inside finishing, paneling, floor covering, roofing, wiring, insulating, heating vents, painting, and installing and finishing the hardware.

EMPLOYMENT OUTLOOK

The employment of carpenters is expected to increase moderately through the 1970's. In addition to new jobs created by employment growth, tens of thousands of jobs for carpenters will be available each year to replace experienced carpenters who transfer to other fields of work, retire, or die.



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BUILDING MAINTENANCE

NATURE OF THE WORK

Building custodians are responsible for the maintenance of apartment buildings, office buildings, hotels, hospitals, schools, and other buildings. The job includes the responsibility for the proper functioning of the heating and ventilating equipment, the maintenance of a clean and orderly building, and many other tasks.

MAJOR UNITS OF STUDY

Building maintenance
Plaster repair
Glass installation
Maintenance electrical work
Maintenance plumbing
Floor tile installation
Ceiling tile installation
Pest control techniques
Painting
Pouring concrete

Students have on-the-job training two days each week.

EMPLOYMENT OUTLOOK

Opportunities for employment are expected to be very favorable through the 1970's with an increase in the private contract cleaning agencies.

FURNITURE REFINISHING

NATURE OF THE WORK

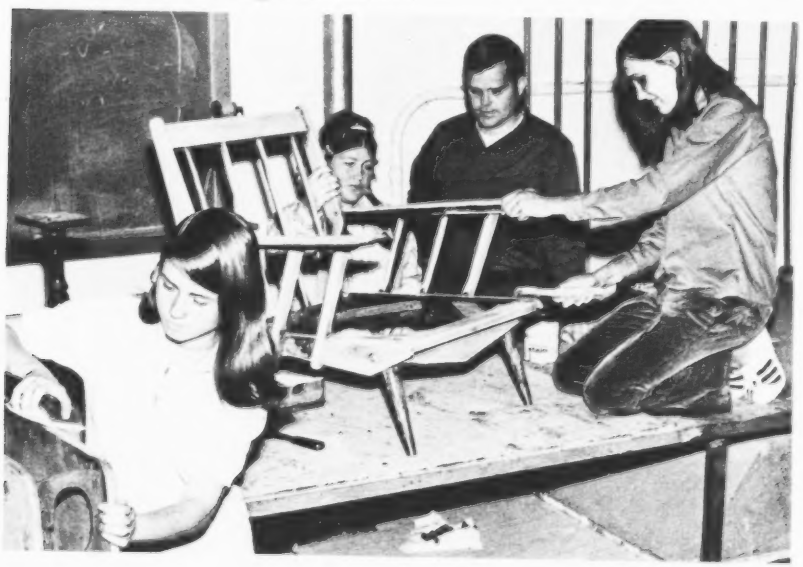
Furniture with a finish that needs to be redone is cleaned, stripped, sanded, and, if necessary, repaired. The item is then prepared for its new finish. How to select and apply the best finish for each item is one of the fundamentals that must be learned. The wood may be stained for the desired effect, or a natural wood finish may be obtained. A great variety of color results may be obtained with a paint finish or with the special effects of antiquing.

MAJOR UNITS OF STUDY

Introduction to furniture refinishing
Identification of types of surfaces and finishes
Preparation of articles for refinishing
Application of new finish
Rubbing and polishing refinished objects

EMPLOYMENT OUTLOOK

As more individuals join the ranks of the collectors of old or antique furniture, the demand for help in refinishing will continue to grow. Commercial refinishing companies as well as individuals are presently offering this service.



METAL FABRICATION

NATURE OF THE WORK

In construction-related work sheet-metal workers fabricate and install air-conditioning, heating systems, and ducts used in ventilating. Using thin metal sheets, they fabricate and install roofing and siding, store fronts, framework for neon signs, and partitions. The metal fabrication worker reads blue prints, plans the sequence of operations, and works with metal materials in performing precision work.

The total number of training hours in the Metal Fabrication program is 1,020. At the end of the course of study the student will be able to enter the labor market as a semi-skilled operative.

MAJOR UNITS OF STUDY

Planning the job
Sawing and bench work
Drill press work
Die and tap work
Fitting and assembling
Sheet metal work
Care of equipment
Hot metal working process

EMPLOYMENT OUTLOOK

The employment opportunities for sheet metal workers is expected to increase rapidly through the 1970's.

PLUMBING AND WIRING

NATURE OF THE WORK

Construction electricians lay out, assemble, install, and test electrical apparatus, wiring, and fixtures used in electrical systems. They may install and connect signal and communications systems, electrical equipment, and controls.

Plumbers and pipefitters install pipe systems that carry air, water, steam, or other gases or liquids used for sanitation, industrial, or other uses. They may install appliances, heating and refrigerating units, and plumbing fixtures. They also may make repairs or alter existing plumbing or pipe systems.

MAJOR UNITS OF STUDY

The purpose of Plumbing and Wiring I is to teach the safety aspects in the selecting, measuring, cutting, threading, fitting, soldering, and cleaning techniques used in plumbing, and to teach similar safety aspects in selecting wire, forming, installing, measuring the current, and using hand tools in wiring.

Plumbing and Wiring II concentrates on the layout, planning, blue print reading, and safety symbols which the student must know. Some electrical equipment is used.

EMPLOYMENT OUTLOOK

The employment outlook for construction electricians and plumbers and pipefitters is expected to rise rapidly during the 1970's.

ORNAMENTAL HORTICULTURE

Horticulturists work with orchard and garden plants. These plants include flowers, vegetables, ornamental plants, and other nursery stock.

A program in Vocational Ornamental Horticulture is provided at Wayne High School.

ORNAMENTAL HORTICULTURE

NATURE OF THE WORK

Students in this program are given an introduction to greenhouse management, nursery management, landscaping, and lawn management. Students are capable of performing a variety of related jobs upon completion of the program. These include work with a florist or nurseryman, conservation worker, gardener, grounds keeper, tree trimmer, farmer, flower grower, farm hand, or agriculture-related retail businesses.

MAJOR UNITS OF STUDY

Vocational Agriculture I and II
Ornamental Horticulture I and II
- Propagation of flowers and shrubs
- Grafting and budding
- Preparing shrubs, flowers, and garden vegetables for sale
- Herbicides, fungicides, and insecticides
- Potting
- Cultivating
- Mulching
- Spraying
- Dusting
- Pruning
- Fertilizing

EMPLOYMENT OUTLOOK

Job opportunities for horticulturists are expected to be very good during the 1970's.

REFERENCE

Occupational Outlook Handbook, 1970-1971 edition, U. S. Department of Labor, Labor Statistics, Bulletin No. 1650.

The reference given above was used as a source of information in obtaining an accurate employment outlook forecast for the courses listed in this vocational handbook.

NOTES

VT 017 443

VT 017 443
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VOCATIONAL EDUCATION EVALUATION PROJECT
ANNUAL REPORT--FISCAL YEAR 1972.

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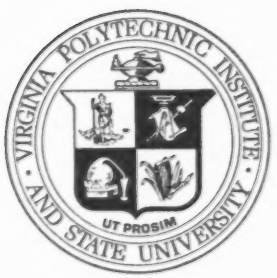
ABSTRACT - THIS ANNUAL REPORT HAS AS ITS PRIMARY OBJECTIVE TO DEVELOP A MANAGEMENT INFORMATION SYSTEM FOR THE PLANNING AND PROGRAMING OF VOCATIONAL EDUCATION, PROJECT EFFORTS WERE EXERTED TO THE DEVELOPMENT OF A MACRO-SUBSYSTEM AND A MICRO-SUBSYSTEM. THE MACRO-SUBSYSTEM WAS BASICALLY CONCERNED WITH GUIDELINES AND SYSTEMATIC PROCEDURES AT THE STATE LEVEL, WHILE THE MICRO-SUBSYSTEM FOCUSED ON THE ASSESSMENT, PLANNING, AND PROGRAMING OF INDIVIDUAL VOCATIONAL EDUCATION PROGRAMS IN LOCAL SCHOOLS. FIELD TESTED IN 16 SCHOOLS AND INVOLVING SOME 11,000 STUDENTS, THE MACRO-SUBSYSTEM RESULTED IN A REPORTING SYSTEM WHICH INVOLVED STUDENTS AND TEACHERS. THE MICRO-SYSTEM, THE PROGRAM AND COST-EFFECTIVENESS COMPONENT, WAS MORE CONCERNED WITH THE DEVELOPMENT OF A SET OF SYSTEMATICALLY ORGANIZED INSTRUCTIONAL BEHAVIORAL OBJECTIVES, AND INVOLVED SEMINARS AND WORKSHOPS FOR SOME 66 VOCATIONAL TEACHERS. OTHER PROJECT ACCOMPLISHMENTS FOR THE 1972 FISCAL YEAR ARE INCLUDED, AS ARE PROJECTED PLANS FOR 1973. (AUTHOR/SN)

Vocational Education Evaluation Project



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ANNUAL REPORT--FISCAL YEAR 1972

VEEP Report No. 3

September, 1972

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FOREWORD

The primary objective of the Vocational Education Evaluation Project is to develop a management information system for the planning and programming of vocational education. To facilitate the accomplishment of this objective, the work of the project has been divided into a macro-subsystem and a micro-subsystem. The macro-subsystem is primarily concerned with guidelines and systematic procedures at the state level, while the micro-subsystem is emphasizing the assessing, planning, and programming of individual vocational education programs in local schools.

Direct costs for this project were funded on a 90 percent reimbursement basis by the Division of Vocational Education, State Department of Education, Richmond, Virginia. These funds came from Part C of the Vocational Education Amendments of 1968. The remaining 10 percent of direct costs and all indirect costs were funded by the Research Division, Virginia Polytechnic Institute and State University. Data processing for the Vocational Education Reporting System was provided by the Division of Educational Research and Statistics, State Department of Education.

Special gratitude is expressed to the Division of Vocational Education and the Division of Educational Research and Statistics, State Department of Education for their financial assistance and staff support.

Considerable progress has been made in fiscal year 1972 toward meeting the primary objective of the project. Annual Report -- Fiscal Year 1972 summarizes the accomplishments for fiscal year 1972 and the projected plans for fiscal year 1973.

This publication is third in a series of publications of the Vocational Education Evaluation Project. The intent of this series is to inform educators in Virginia as well as the nation, of the work of the project.

Dewey A. Adams, Director
Division of Vocational and
Technical Education
College of Education

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PROJECT ACCOMPLISHMENTS--FISCAL YEAR 1972

Macro-subsystem

The major objective of the macro-subsystem is to design a means for supplying necessary base-data to decisionmakers at the state level. These data will be used for assessing, planning, programming, and budgeting vocational education programs.

Data Collection Component--Vocational Education Reporting System (VERS)

The development of a more systematic procedure for collecting, processing, and reducing the data to desirable forms received first priority in meeting the above objective. Six principles guided the development of the new system:

1. present data-gathering procedures must be streamlined,
2. more accurate information must be obtained,
3. reporting requirements of federal legislation must be met,
4. students should be involved in supplying information,
5. the processing of the data should be mechanized,
6. the system should be field-tested for its feasibility and revised before statewide implementation.

A reporting system resulted which involved students and teachers in supplying student and program information using enrollment (optical scanning) forms. The system also involved teachers who updated that information twice a year using "student status" forms for each student.

The system was field-tested in 16 schools involving about 11,000 students. Several problems in form, layout, and operating procedures became evident as a result of the field test. Revisions have been made to correct these problems in the original system.

The new computer-based Vocational Education Reporting System, VERS, (as it is planned to be implemented statewide this fall) consists of five basic steps. The first step deals with the collection of information about enrollees and vocational education programs. Student characteristics, addresses, and program information are obtained from the students and instructors using optical scanning forms. The major portion of this information is provided by the individual student under the direction of the teacher. The forms are completed on or about September 30, with forms for each new student who enrolls after that date being completed and submitted later. An optical scanning device will be used in processing the forms and storing the information on computer tape. All data processing will be done in the Division of Educational Research and Statistics, State Department of Education.

In step 2, the data processing routines draw from the computer tape the information needed to develop lists of students with their names and identification numbers. A list is developed for each vocational course in each school in the state.

The third step begins with the returning of the student lists to teachers in May. The teachers then examine the lists and note changes in the status of the students. Those who have withdrawn from the program or who have completed the program requirements are so indicated on the lists. The computer tape is updated by adding this information to the students' records. Thus, at the end of the school year, the computer tape contains up-to-date information on all students who were enrolled in each program during the year.

Step 4 involves a follow-up of students who completed the program requirements and graduated or who terminated their training but have a marketable skill. These are identified in step 3 and the follow-up questionnaires are mailed directly to the students.

Step 5 is an analysis of the follow-up survey. The completed follow-up questionnaires are keypunched on data cards and the necessary information compiled. Follow-up data, along with the other information on the computer tape, will be analyzed and compiled in the format desired by those who will use the data.

The system will reduce the reporting tasks of teachers by: 1) collecting most of the individual student information directly from the students, 2) keeping a record of students who complete the program requirements prior to the year they graduate, and 3) conducting the follow-up of students. Machine-processing of the data should greatly reduce the time required by supervisors and others to tabulate data by hand.

The operation of the system will be supervised by the Coordinator of Vocational Education Research and Statistical Information, State Department of Education. At the local level, individuals have been designated as reporting system coordinators in each school division in the state. These division coordinators will receive the forms and instructions, distribute them to the schools and teachers in their division, collect the completed forms, and forward them to the State Department of Education. The division coordinator will disseminate the analysis of the results to division and local personnel for use in local program planning. Also, the division coordinator will serve as a liaison between the local personnel and the State Department of Education in evaluating, updating, and improving VERS.

The Vocational Education Reporting System will not only reduce the tasks of teachers and supervisors but will also improve the accuracy and uniformity of data gathered from the vocational services. This should aid in better planning of vocational education programs in the state.

A quantity of 375,000 VEEP-1 forms were ordered and received. A "Teacher's Guide," written to assist teachers in understanding the system and administrating the forms, will be distributed at the teachers' summer conferences and at the beginning of the 1972 school year.

Planning Component Work began on the development of a planning system which would facilitate the decisionmaking functions at the state and local levels. The system, when developed, will incorporate data from VERS as well as various other sources.

Two possible approaches were considered in the development of a planning system. One approach dealt with a planning system built around a set of given goals. Development of procedures and guidelines to meet these goals would be the main concern of such a system.

The second approach concerned the bases on which goals and priorities are established. Instead of a planning system being based on a set of given goals, this approach would develop procedures and guidelines for collecting data required to establish the goals and methods to meet those goals. Such a system is concerned with the supply and demand of the work force and requires the development of a supply-demand model.

The two approaches are not mutually independent, only the starting points are different. Since the second approach is more comprehensive, it was decided that this approach would be the more rewarding over a long period of time.

Micro-subsystem

Program Effectiveness Component As stated in the publication, Vocational Education Evaluation Project, the concern of this component is:

> ". . . the measurement of student achievement and its relationship to future job success. To accomplish this goal,

> research will be conducted on attitudinal indices that will predict job success and the relationship between the attainment of teacher goals and employer satisfaction. The teacher goals are being formalized as behavioral objectives which will be used to develop a series of achievement tests for each of the vocational areas. A by-product of this work will be BOOST, Behavioral Objectives Organized in a System for Teachers."

In June of 1971, a two-week workshop was held for selected teachers representing the five vocational services. The purpose of the workshop was to train the teachers 1) in writing behavioral objectives using an approach developed by Gronlund and 2) in writing test items. As a continuation of the workshop, the teachers developed a unit of instruction during the fall of 1971. Dr. Richard Hill visited these teachers individually and assisted them in seminar sessions throughout the first half of the year. The result of this effort was two-fold: 1) 30 units are presently in the final revision stage, with some tests already being administered by project teachers to their classes and 2) the framework through which the units are written has been revised to its final form. This new framework facilitates both the writing and use of the units which are to be developed. The second workshop for vocational teachers was held in June 1972. At this workshop 66 teachers from business education, distributive education, home economics education, and trade and industrial education participated in a two-week session. Agricultural education teachers (approximately 20) will participate in a workshop the first two weeks of August, 1972.

Following a suggestion of the Advisory Committee, state supervisors for each of the five vocational services were asked to indicate the unit titles within their services which are most widely used and should receive priority. These units were the ones which were developed during the workshop. More units from the lists presented by the state supervisors will be developed in the fall of 1972.

Preliminary investigation of the means to define and measure "job success" began during fiscal year 1972. A most promising approach was discovered and will be adapted for use during the coming year.

Cost-effectiveness Component A literature search was started by one of the GRA's. Also, a computer search of Dissertation Abstracts (DATRIX) was ordered and received from University Microfilms.

Staffing

The position of Administrative Specialist, open at the beginning of the year, was filled in August with the addition of the fourth professional staff member with a Ph.D. degree. Two graduate research assistants (GRA) were employed at the beginning of the academic year. The third GRA was added in January and the fourth in June.

Advisory Committee

Dr. Robert Stake, Center for Instructional Research and Curriculum Evaluation, University of Illinois, Urbana, resigned from the advisory committee in September. Dr. Furman Moody, Director of the Research Coordinating Unit for Vocational Education, Harrisburg, Pennsylvania, was appointed to fill the vacancy. In addition to Dr. Moody, the committee includes:

Dr. David Berliner, Far West Laboratory for Educational Research and Development, Berkeley, California.

Dr. Leonard S. Cahen, Educational Testing Service, Princeton, New Jersey.

Dr. Jimmie Fortune, School of Education, University of Massachusetts, Amherst, Massachusetts.

Dr. Jerome Moss, Research Coordinating Unit, University of Minnesota, Minneapolis, Minnesota.

Dr. Milton Phillips, College of Education, Memphis State University, Memphis, Tennessee.

Two meetings of the advisory committee were held during the year. At the first meeting in November the major concerns were improvement of procedures for developing the BOOST component and the data forms to be used in VERS. The second meeting in May was devoted to ways of expanding BOOST, achievement testing, instrumentation, and results of the field test of VERS. It was suggested at this meeting that a person with expertise in sampling be added to the committee.

Meetings With State Staff

During the year, six meetings were held in Richmond with the five state vocational supervisors, the supervisor of statistical services, or members of their staffs. These meetings were held for the purpose of providing the supervisors with reports on the progress of the various components and give them an opportunity to have direct input into the project.

Visits Out-of-State

Dr. Vivekananthan twice consulted personnel in the U. S. Office of Education, Washington, D. C., concerning the development of VERS. He also visited the Kentucky Department of Education, Lexington, Kentucky, to study the reporting system being used in that state.

VEEP Library

A continual search is made for literature and materials related to the work of the project. Materials are now on file from the Department of Education of various states, the U. S. Office of Education, and other major projects throughout the nation.

Access to the ERIC system has been made available to VEEP through the Research Utilization Project in the College of Education, Virginia Polytechnic Institute and State University. Microfiche and hardcopy related to the various components of the project are being collected and filed for reference.

Presentations at District, State, Regional, or National Meetings

District

8/26/71 -- "Developing Objectives in Language Arts" Montgomery County Language Arts Teachers Conference, Christiansburg. (Hill)

3/13-17/72 -- "Behavioral Objectives Organized in a System for Teachers (BOOST)," five district meetings of instructors of Agricultural Education at Blacksburg, Bristol, Broadway, Mechanicsville, and West Point. (Oliver, Hill, and Elson)

State

7/1/71 -- "Evaluation of Vocational Education" annual conference of Virginia instructors of Agricultural Education, Blacksburg. (Oliver)

7/14/71 -- "Evaluation of Vocational Education" annual conference of Virginia Occupational Home Economics teachers, Richmond. (Oliver)

8/4/71 -- "Preparing Specific Objectives" annual conference of Virginia Consumer and Homemaking teachers, Roanoke. (Hill)

9/10/71 -- "Classroom Evaluation" Manpower Teachers Training Conference, Blacksburg. (Hill)

10/22/71 -- "Vocational Education Evaluation Project" annual fall meeting of the Virginia Vocational Education Association, Roanoke. (Oliver)

10/29/71 -- "BOOST and Business Education" Virginia Business Education Association, Richmond. (Hill)

2/3/72 -- "Virginia Vocational Education Reporting System" meeting of the state supervisory staff of Trade and Industrial Education, Richmond. (Oliver and Vivekananthan)

5/12/72 -- "Progress Report-VEEP" meeting of the state supervisory staff of Agricultural Education, Blacksburg. (Oliver)

6/21/72 -- "Virginia Vocational Education Reporting System" meeting of the state supervisory staff in Distributive Education, Harrisonburg. (Oliver)

Regional

7/28-30/71 -- "Developing a Statewide Evaluation System for Vocational-Technical Education" Southern Research Conference in Agricultural Education, Clemson, South Carolina. (Hill)

11/7-10/71 -- "The U. S. Office of Education Reporting Requirements for Vocational Education." Southern States Council on Educational Research and Statistics, Jackson, Mississippi. (Oliver and Vivekananthan)

National

6/14-16/72 -- "Meeting the Needs of Students with Improved Behavioral Objectives" annual conference of the National Association of Colleges and Teachers of Agriculture, Murfreesboro, Tennessee. (Elson)

Other Meetings Attended

9/3-7/71 -- American Psychological Association, Washington, D. C. (Hill and Vivekananthan)

11/30-12/3/71 -- American Vocational Association Pre-session on Research, Portland, Oregon. (Oliver)

12/3-8/71 -- American Vocational Association and meetings of affiliated organizations, Portland, Oregon. (Oliver and Elson)

4/3-5/72 -- American Educational Research Association, Chicago, Illinois. (Hill)

4/6-7/72 -- National Council on Measurement in Education, Chicago, Illinois. (Hill)

5/10-12/72 -- Virginia Educational Research Association, Charlottesville, Virginia. (Hill)

6/13-16/72 -- Regional Seminar/Workshop on Women in the World of Work, Wilmington, Delaware. (Oliver)

Publications and Publicity

Journal Articles

"Evaluation of Instructional Programs" Agricultural Education News. Vol. III, No. 5, January 1972. p. 5. (Staff)

"Vocational Education Evaluation Project" Virginia Vocational Education Association News. Vol. XXIV, No. 3, February 1972. pp. 12-14. (Staff)

"New Vocational Education Reporting System" Public Education in Virginia. Vol. 8, No. 2, Summer 1972. pp. 13-14. (Staff)

"Improving Vocational Education in Virginia" article submitted for publication in the Virginia Journal of Education. (Staff)

"Writing Behavioral Objectives Doesn't Have to be So Hard" article submitted for publication in the Agricultural Education Magazine. (Hill)

Publications

An Evaluation System for Vocational Education in Virginia. July, 1971. (summary of accomplishments for fiscal year 1971 and plans for fiscal year 1972)

Vocational Education Evaluation Project. April 1972. (a document for limited distribution)

VEEP. (in press) (a fold-out document for wide distribution)

"Virginia Vocational Education Reporting System TEACHER'S GUIDE." (a guide to the use of VERS)

Radio and Press Releases

Three tapes were made for statewide distribution to radio stations. The over-all purpose and objectives of the project were discussed on the first tape. The micro- and macro-subsystems were topics for the second and third tapes, respectively.

Articles were submitted through VPI&SU Information Services for distribution to newspapers throughout the state. The articles were related to the Advisory Committee meetings, teacher workshops, and activities of the staff.

PROJECTED PLANS FOR FISCAL YEAR 1973

Macro-subsystem

Vocational Education Reporting System VERS will be implemented statewide in all school divisions during the 1972-73 academic year. Either project staff members or Carl Jorgensen, Coordinator of Vocational Education Research and Statistical Information, State Department of Education, or both, will explain the system to the vocational teachers at each of the five vocational service summer conferences. Also area meetings will be held with the local coordinators who have been appointed in each of the school divisions. Copies of the "Virginia Vocational Education Reporting System TEACHER'S GUIDE" will be provided to each vocational teacher in the state.

As a continuation of the field test of VERS, a follow-up of all vocational students completing a vocational program and terminating or graduating from the 16 pilot schools will be conducted in October. After analysis of the data and procedures have been completed, revision will be made in preparation for implementation of the statewide follow-up in fiscal year 1974.

Planning Component The supply-demand model for the planning system will be developed and relevant variables delineated. Input data, in addition to VERS data, will be described and sources of the data explored.

Micro-subsystem

Program Effectiveness The second session of the 1972 workshop will be held the first two weeks of August for agricultural education teachers. Dr. Hill and the GRA's will check and revise the units of instruction written by the teachers participating in the 1972 workshops. Meetings, individually and in

groups, will be held with the workshop teachers as they continue their work of developing the second unit of instruction in the fall and early winter.

Work will continue on the development of instrumentation to measure job success. Correspondence began during fiscal year 1972 with Dr. Jerome Moss, Director of the Minnesota Research Coordinating Unit, concerning this work. His assistance should facilitate this effort.

Process-Product Component Identification of important variables and the development of a system to provide data about these variables will be of first priority as work begins on this most important component during fiscal year 1973. Materials developed in the Program Effectiveness Component will be incorporated into the Process-Product information system.

Cost-Effectiveness Component Work will continue in gathering information from the literature. This component cannot be fully implemented until data from the Program Effectiveness and Process-Product Components are available.

Staffing

One of the graduate research assistants will be completing his residency on campus at the end of the second summer session. His position will be filled at the beginning of the fall term. It is hoped that funding will be available to increase the number of GRA's in fiscal year 1973.

Advisory Committee

Plans call for one meeting of the Advisory Committee in November and a second meeting in May. The seventh member, with expertise in sampling techniques, will be added to the committee before the November meeting.

State Staff

The appointment of Carl Jorgensen as Coordinator of Vocational Education Research and Statistical Information will relieve the project staff of much of

the administrative responsibilities related to VERS. The staff will continue to meet with him and assist him in improving and up-dating VERS.

Several meetings are anticipated to be held with the five state supervisors and their staffs in relation to the planning component of the macro-subsystem and to all components of the micro-subsystem.

VT 017 444

VT 017 444
SCHUMAN, FRED P.
VOCATIONAL ORIENTATION OF VISUALLY AND PERCEPTUALLY HANDICAPPED JUNIOR HIGH SCHOOL STUDENTS. FINAL REPORT.

HARTFORD CITY BOARD OF EDUCATION, CONN.
CONNECTICUT STATE DEPT. OF EDUCATION, HARTFORD. DIV. OF VOCATIONAL EDUCATION.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 30JUN72 29P.

DESCRIPTORS - PILOT PROJECTS; *HANDICAPPED STUDENTS; HANDICAPPED CHILDREN; EDUCATIONAL RESEARCH; *JUNIOR HIGH SCHOOL STUDENTS; OCCUPATIONS; *VOCATIONAL EDUCATION; CAREERS; *VOCATIONAL COUNSELING; OCCUPATIONAL GUIDANCE; *BLIND CHILDREN

ABSTRACT - SUMMARIZED ARE THE RESULTS OF A PROJECT EFFORT CONCERNED WITH PROVIDING WORK ORIENTATION TO LEGALLY BLIND AND PERCEPTUALLY HANDICAPPED STUDENTS IN HARTFORD, CONNECTICUT. FIELD TRIPS FOLLOWED BY INDIVIDUAL AND GROUP COUNSELING SESSIONS WERE USED TO EXPOSE STUDENTS TO THE WORLD OF WORK. ONLY BOYS PARTICIPATED IN THE STUDY. QUESTIONNAIRE RESPONSES ELICITED FROM THE STUDENTS, WITH THE HELP OF THEIR PARENTS, PROVIDED THE EVALUATION DATA. AN ANALYSES OF THE FINDINGS INDICATED THAT THE PROJECT WAS NOT VERY SUCCESSFUL IN ITS EFFORT TO PROVIDE STUDENTS WITH USEFUL JOB AND VOCATIONAL INFORMATION. WHILE ALL OF THE STUDENTS WERE ABLE TO VERBALIZE SOME EXTENDED KNOWLEDGE, VERY LITTLE OF THE INFORMATION WAS MAINTAINED. RECOMMENDATIONS MADE INCLUDED: (1) MORE CONTACT SHOULD HAVE BEEN MADE BETWEEN THE PROJECT ADMINISTRATOR, FIELD WORK SUPERVISOR, COUNSELORS, AND TEACHER, (2) THE FACT THAT GIRLS WERE DROPPED FROM THE PROGRAM POINTS OUT AN AREA FOR FURTHER STUDY, (3) THERE WAS A NEED FOR MORE EXTENSIVE SUPERVISION, AND (4) BECAUSE THE PROGRAM WAS OF SOME BENEFIT TO STUDENTS, IT SHOULD BE EXTENDED ON A STATEWIDE LEVEL. (SN)

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VOCATIONAL ORIENTATION OF VISUALLY AND PERCEPTUALLY HANDICAPPED JUNIOR HIGH SCHOOL STUDENTS

FINAL REPORT

Fred P. Schuman
Hartford Board of Education
249 High Street
Hartford, Connecticut

June 30, 1972

VT017444

CONNECTICUT STATE DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
RESEARCH AND PLANNING UNIT
HARTFORD, CONNECTICUT

VOCATIONAL ORIENTATION OF ~~VISUALLY~~ AND PERCEPTUALLY HANDICAPPED JUNIOR HIGH SCHOOL STUDENTS

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Points of view or opinions stated do not necessarily represent official opinion or policy of state or federal governmental agencies, as the writers are encouraged to express freely their professional judgement in the conduct of the project.

CONNECTICUT STATE DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL EDUCATION
RESEARCH AND PLANNING UNIT
HARTFORD, CONNECTICUT

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(Appendixes are not on microfiche because of poor print quality)

SUMMARY PAGE

The project which is described in this report was concerned with providing work orientation to legally blind and perceptually handicapped students in Hartford, Connecticut. Here, a selected group of students were exposed to the world of work, through series of structured field trips which were followed by individual and group counseling sessions. Because the students were able to observe many people invilved in different types of work on a "first hand" basis in various service and industrial organizations, it was possible to use the project as a vehicle for the clarification of the students' future vocational plans.

Students learned much about the world of work and, on the basis of the data which was collected, were able to clarify their own vocational objectives to an appreciable extent. Similarly data collected about the operation of the project provides the basis, despite limitations in the project's scope. Information gathered can be used to set up an on-going statewide project which should be broader and more effective because of the knowledge gained from this limited pilot effort.

BACKGROUND

In developing this project of work orientation for visually and perceptually handicapped junior high school students, a number of considerations were evident. First, of all, the students were to come primarily from the Fox Middle School in Hartford. This was done for two reasons: the concentration of youngsters with visual problems, and the amenability of the age range to the program.

Next, this project was developed because the nature of the visual and/or perceptual handicap placed youngsters at a great disadvantage when it came to learning about jobs and the world of work in general. Finally, for the most part the students had little, if any, exposure to different types of work or to real life working conditions. Consequently, this program was developed as one method to alleviate the problem.

OBJECTIVES

The development of the project did not contemplate the construction of behavioral objectives, limited program information mandated that a series of program objectives would serve instead. Thus, the final project objectives were as follows:

1. The student will be able to choose three jobs that he has been exposed to and will describe each job to the satisfaction of qualified job counselor.
2. Each student will be able to determine which of a series of organizations are industrial in nature and which are service in nature.

3. Each student will, upon completion of the training program, describe future vocational plans according to acceptable standards for his age, grade, experience level and impairment.

   a. Goal statements will be evaluated for relevance and completeness by a trained job counselor.

   b. Where the statement seems inappropriate, concrete plans will be made for follow-up counseling services.

4. The student will have a more appropriate understanding of what he can and can't do in the world of work. Appropriateness will be judged by the student's record and capacity.

5. Each student will be exposed to several blind people at work. They will be given a chance to react to these people. To fulfill this objective, students verbal statements will be rated on a five point scale.

6. Students will be asked to evaluate the program in terms of specific usefulness to him.

OPERATIONS

The project was administered by Mr. Fred P. Schuman who made all arrangements for the trips and for the follow up activities. Mr. Richard Clancy, Supervisor, of the Hartford Special Education Department served as the titular Project Director.

The primary vehicle for the program was the organization and conduct of field trip student exposures. On these trips which would include industrial concerns and

service organizations, an emphasis was placed upon the exposure of the students to various people at work and to the different kinds of work which they were doing. While this was a very basic procedure it was something that had not been done in Hartford for visually impaired youngsters. For these youngsters, exposures of this kind were virtually non-existant.

The Project Adminstrator was responsible for arranging and leading field trips. Upon the completion of a contact, the Project Administrator would make a preliminary tour of the host's facilities. This was done to evaluate its specific usefulness to a given group of students. The basis for selecting hosts was the desires and interests of the students.

As a first step in the program, the Administrator arranged a talk for the students by counselors from the State of Connecticut Board of Education and Rehabilitation Services for the Blind. This talk was built around an initial questionnaire which had been developed primarily to determine each student's awareness of the services which were available, and their own feelings about their impairment. A copy of this questionnaire is contained in the appendix.

To determine the effectiveness of the several visits the Project Administrator and Mr. Thomas Fleck, a qualified job counselor who was to evaluate the program, worked out a system whereby the students were given a questionnaire which had been designed to measure project objectives. Here it was the hope that students would take home the

questionnaire and have their parents help them to answer the questions. This was done not only to elicit answers to the questions but to determine how interested the parents were in their child's situation and in the program as well. Questionnaires which were not filled out in the home were retained by the Project Administrator who would then interview each student to get the necessary information. Elicited materials were then evaluated by Mr. Fleck and Mr. Schuman, in terms of the stated objectives.

EVALUATION

1. The students were generally unable to meet the first objective. Only one of the students attempted to answer the related question in the intended manner, it seemed quite possible that this was beyond the ability of each student. While it seemed quite likely that each student had at least an inkling of what the visited jobs consist of, these youngsters were unable to verbalize their thoughts on paper.

2. The second objective was achieved since each student correctly labeled all five organizations.

3. Objective three met with a reported high level of success and also with some degree of disappointment. Several of the students stated objectives that were quite reasonable and clear; one honestly said he did not know; but two others still want to be ball players. These two students are quite immature. Hopefully, their plans will change over the next few years, as as to become more meaningful.

4. Probably much the same situation holds for the fourth objective as did for the third; most of the students had very good answers; two again showed their immaturity

at this time and further counseling will be required to reach a realistic level of self understanding.

5. The fifth objective met with four fours and a five, with five being the highest score. Here the objective was accomplished.

6. Finally, each student commented on the program. All stated that they enjoyed it and felt that they had learned something, while the majority of them wished for additional field trips experiences.

CONCLUSIONS

In general, the project was designed so that the students would gain certain job and vocational information. We were not very succesful. While all of the students were able to verbalize some extended knowledge here, very little of the information was maintained. Part of the reason for this was that the counselors of the blind tended to talk at a level above these youngsters. Youngsters who were not attuned to the specific presentation did not pay attention to what was being said. While follow up interviews were used by the Project Administrator to re transmit the information again, it was felt that all too little of it was actually absorbed. It must be pointed out that before the first interviews, the students had virtually no exposure to the world of work. Thus, even if an average of 20% of the information was picked up by the students, this in itself was a marked improvement.

Specific recommendations included:

1. There should have been more contact between the Project Administrator, the Field Work Supervisor, the Rehabilitation Counselor, and the Teacher of the Visually Handicapped. Regular meetings at set intervals should be scheduled.

2. The fact that girls were dropped from the program points out an area for further study. Perhaps girls should be in a separate program or an approach aimed at a higher grade level might be more effective. Determining the proper group mix for a project such as this is an area for further research.

3. The Project Administrator felt a strong need for more extensive supervision. The information that the students were supposed to receive from the State Board for the Blind Staff would be very beneficial to the students if they were able to put it to use. It is recommended that further effort be applied in finding an efficient method to transmit this information to the student and to see that he can utilize it.

4. Because this program has been quite beneficial to the students, it is recommended that this program serve as the basis for a bigger and broader program on a statewide level.

APPENDIX

FIRST INTERVIEW

1. What organizations are the major sources of vocational information and counseling for visually and perceptually handicapped students in the State of Connecticut?
2. Name the five best sources of job information that you are aware of?
3. What kind of jobs can visually or perceptually handicapped do?
4. Do you know of any employers of the visually or perceptually handicapped in the Hartford area?
5. What is a job description?
6. What is a talking book?
7. What is the source of talking books in the Hartford area?
8. What is the Board of Education for the Blind?
9. What services do they offer?
10. Where are they located?
11. What is the AFB?
12. What services do they offer?
13. Where are they located?

FOR PROJECT [illegible] NAME: (see individual sheets for answers)

Please answer the following questions with the aid of your parents.

1. Pick any three jobs you have been exposed to and describe them fully. Include what the work consists of and what abilities a man must have to do the job.

2. Label each of the organizations below with an S if they are service organizations and with an I if they are industrial organizations:

   CAPEWELL
   HARTFORD HOSPITAL
   WTIC
   STANADYNE
   PRATT AND WHITNEY

3. What kind of work do you think you can do? Why? What kind of work do you feel you can not do? Why?

4. What are your future vocational plans / what kind of work would you like to do?

5. What was your reaction to M. and S. / Did they motivate you positively or did they turn you off?

6. How do you feel about the program? Did it help you? How / How could we have made it better?

7. Please check the places that <u>you</u> visited as a member of the project group.

   THE AETNA
   CAPEWELL
   CHANDLER EVANS
   HARTFORD HOSPITAL (SHELLY)
   HARTFORD REGIONAL CENTER
   IBM
   MT. SINAI HOSPITAL
   PRATT AND WHITNEY MACHINE TOOL
   PRATT AND WHITNEY SMALL TOOL
   THE TELEPHONE COMPANY
   STATE CAPITOL
   STANADYNE
   UNIVERSITY OF CONN.
   WTIC

ANSWER PAGE NAME: W... Y.

1. Capewell - Hartford Hospital - WTIC

2. I - S - S - I - I

3. Hospital - because of it service. I wouldn't like Standyne....I don't like machines.

4. Sports - Play ball

5. Motivate

6. I liked the program - very good.

7. Aetna - Capewell - Chandler Evans - Hartford Hospital - IBM - Pratt and Whitney Machine Tool - Pratt and Whitney Small Tool - The Telephone Co. - State Capitol - Standyne - University of Conn. - WTIC

* *

Comments by W. Y.

Hospital: This is what I think about Hartford Hospital - I like the X-Ray.... Why - because it shows the conditions of a person's body and shows signs of affected lungs and so on.

Pratt & Whitney - I like Pratt & Whitney because they are exciting to see them work. Why, because they make a lot of our equipment that we use in different area of work.

Capewell: I like the way M. he was banging the vises with the hammer. M. was very good at his work.

We went on some very nice trips.
Thank you for the trips, Mr. Schuman

ANSWER PAGE NAME: N. M.

1. no answer
2. no answer
3. no answer
4. no answer
5. no answer
6. no answer

Responses recorded on Tape

7. Aetna - Cepewell - Chandler Evans - IBM - Pratt and Whitney Machine Tool - Pratt and Whitney Small Tool - The Telephone Company - State Capitol - WTIC

* *

Comments by N. (On Tape) and available.

ANSWER PAGE

Name: K. T.

1. No answer
2. No answer
3. No answer
4. No answer
5. No answer
6. No answer

} Responses recorded on Tape

7. Aetna - Capewell - Hartford Hospital - Hartford Regional Center - Mt. Sinai Hospital - Pratt and Whitney Machine Tool - The Telephone Company - State Capitol - Stanadyne - University of Conn. - WTIC

W. Y.

W. [illegible] in [illegible] his experiences partially because of his limited ability. His mother was [illegible] of his recent [illegible] at home. He now has had a new [illegible] to him. Consequently, he is eager to enter his vocational education classes a Hartford Public High School to learn more about the world of work.

Joseph M. Carey
Guidance Counselor
House B

Name: R. T.

1. Capewell Machine Shop - Mills. A machine to know how to run the machines.

   M. - Hospital laundry - to people washing sheets and towels in large washers or other machines that dry in big dryers. People have to learn to run the machines.

   WTIC radio broadcasting, how an actual broadcast and TV cameras. Radio broadcaster has to have a good speaking voice.

2. I - S - S - I - I

3. Working with machines because I've had experience with motors and electric tools at home. Repair work I do not feel I could work at fixing computers because I know nothing about them.

4. I would like to go to Prince Tech to learn more about auto mechanics or carpentry.

5. M. was a blind man who worked at Capewell with circle saws. I was amazed at his skill. I cannot remember who S. was.

6. I enjoyed the program. It helped me understand the types of work people do in these places we visited. It would have been better if we could have started the program sooner in the school year.

7. Capewell - Chandler Evans - Hartford Regional Center - Mt. Sinai Hospital - Pratt & Whitney Small Tool - Pratt & Whitney Machine Tool - The Telephone Co. - State Capitol - Stanadyne - University of Conn. - WTIC

R., M., and S. C. (who attended 3 trips)

The trips during May Mr. Schuman have allowed the 3 students in my class the opportunity to see the behind work experiences that will be available to them when they complete their schooling. They appeared to find the trips interesting as their conversations with me afterward were quite animated. Because the trips were scheduled for just a select few, these boys were made to feel important which is so vital for them. In addition Mr. Schuman's approach and manner in working with them further emphasized this feeling which is so vital for these boys.

/s/ Mrs. I. Rosenberg
Classroom Teacher

[illegible] MIDDLE SCHOOL
305 GREENFIELD STREET
HARTFORD, CONNECTICUT 06112

June 22, 1972

M E M O R A N D U M

To: Mr. Cleary

From: Mrs. [illegible], Guidance Counselor

SUBJECT: Participation of Students with [illegible] in a Career Awareness Program

The following students were involved in this program:

N. M.

R. T.

Both had very positive feelings about the program.

The main aspect of the program was learning about careers by visiting companies in the city. They highlighted the following trips as being especially interesting and informative:

Pratt andWhitney
Capewell
IBM

They learned how to apply for a job..fill out an application. Both were eager to continue next year and would like to be exposed to a greater variety of jobs.

ANSWER [illegible] NAME M. O.

1. [illegible] X-ray - His job is to develop the X-rays. [illegible] way you should have a high school diploma. Well - the [illegible] seem to read quite a lot.

2. 1 - 2 - 3 - 1 - 1

3. I feel that I can do all of them if I had the schooling and training.

   I couldn't work at St. Mt. Sinai because of the strong smell.

4. I don't really know right now. Industrial.

5. S. told us that working in X-ray is a good job and the work is quite easy. I am really interested in this work after meeting with him.

6. I feel that the program has helped me to learn about the different jobs available. They should have started earlier.

7. I haven't gone to Capewell and Mt. Sinai Hospital. I went to all others.

To Whom It May Concern:

I feel the program under the direction of Mr. Schuman has been a rewarding one. Working with youngsters with a visual handicap and exposing them to different occupations through the many field trips to different facilities has provided a positive outlook in the future for employment.

M. O. has enjoyed this experience very much and has become more aware and has a better outlook on life ahead with his handicap.

It has been indeed a great pleasure assisting Mr. Schuman working with our students.

/s/ Henry Haddad
Guidance Counselor

M. O. ...

[illegible] exposed to various types of work in business and industry has [illegible] to M. In that it has given him an insight into the types of work that might be performed by a person with a visual impairment. Very possibly, he can now, to a degree, determine what kinds of employment he may like to pursue in the future.

Considerable interest was shown in the dark-room X-ray techniques at the Hartford Hospital, and in computer programming at the Data Processing Center. M. seemed to enjoy the program and found it to be a helpful and interesting experience.

by: Edna Ennis, Teacher
Visually Handicapped

K. T.

Mr. [illegible] realization program worked a complete [illegible]. Prior to his involvement in the [illegible] program, found table discussions and [illegible] several weeks, K. was [illegible] conclusions about vocational [illegible]. Without his classes he was bewildered [illegible] at a passive level and accomplished little.

K. self-awareness and attitudes toward himself, his peers and his place in his total environment have changed dramatically. He is obviously happier and better adjusted. He openly relates the experiences he has had in the several industries, business and planned programs.

He now feels more capable and sees opportunities for useful employment that he previously had not realized. Accordingly he has [illegible] and has begun to make a steady progress.

It is evident that such a program would be beneficial if it were an on going vocational program with some follow up two or three years from now as K. plans and builds his high school career. Possibly a partnership could be arranged between the high school and business and industry so that a work study or work training program could be undertaken for students such as Kevin who is now striving toward self-fulfillment.

Joseph M. Carey
Guidance Counselor
House B

INTRODUCTION

The purpose of this report is to review statements, written and telephoned, received from teachers who participated in the work-oriented project for varsity and potentially handicapped students at the junior high school level.

Format of this report:

Included in this report will be a general statement about the participants and the form of reporting. Following this will be a general reaction to their responses to the questionnaire. Finally, suggestions will be offered for any future follow-up projects of this nature.

Special Learning Characteristics

According to the information available to this reporter, these several students are visually and perceptually handicapped and are ages 14 and 15 years of age. They attend junior high school in Hartford. Finally, these students have I.Q. scores in the general vicinity of the 90's, though the form of testing is not known to this reporter.

Source of Information/Data

Reactions and comments in this report are based on written self-reports for three students and tape recorded information from two others. Additional general information was provided by Mr. Fred Schuman, Project Administrator.

General Reaction to Field Questionnaire Responses:

Based on written reports, which may have reflected some input from parents, and based on taped record responses which are technically not too clear, it would be somewhat invalid to criticize the student reports individually and in great detail. Rather, it would be beneficial to accept these various statements quite on the surface, and as a group.

Though great detail about job requirements and job advantages and disadvantages is not clearly present, there are definite indications that these students witnessed people at work, and brought with them, impressions about each job or job cluster.

For example: W. _____ observed that X-Ray work "Shows the condition of a person's body"; that "P&WA make a lot of equipment that we use in different areas of work".

M. _____ observed that Computer operators need education -- a high school diploma and that "WTIC (Radio Broadcast Personnel) read quite a lot"; was enthusiastic about personal contact with a blind worker and was encouraged.

N. stated that, "Program showed that any guy could get a job if he wanted to", in addition, he reported on "machinist at P&WA works with drill press and lathe...." suggesting some knowledge of what was being done and some nomenclature which may have been quite new to him; he referred to the assembler, "putting parts together".

S. ., in his tape recorded answer more spontaneously mentioned,
... ...(and can't do) hospital work".
..., but according to other answers
(... ... ...) he did show more enthusiasm and overall
... ... verbal communications
... ... and improved.

K. recognized that one has to learn to run a machine; he related this experience to his "working with some machines at home". His suggestion of the "computer field" may not be too realistic due to the need for rather fine detail and visual activity required in operating and trouble-shooting activities.

Suggestions for possible follow-up projects:

1. A future orientation might include some role-playing at school based on experience from visits to a local high school (machines or industrial arts, cafeteria services, automotive shop, photo club, custodial-building maintenance services). The advantages here would be several-fold. Student would receive an instructor-oriented introduction to the activity; could probably perform or participate, as against the profit and liability aspects of "outside industry";

Students could begin to build a job description based on this "local" experience and could be better prepared to ask questions and make observations about job components when they go in to the competitive field for their visits.

2. [illegible] would be [illegible] parents, [illegible] [illegible]. [illegible] would give evaluator an [illegible] [illegible].

3. [illegible] ability-versus performance is an important [illegible] would [illegible] significantly to the evaluator and to guidance [illegible] [illegible] over the next several years of school effort [illegible] with a view toward vocational or career planning.

A program with this purpose could go a long way to establishing or improving a student's aspirations.

4. Perhaps more information from parents would be advisable. Such as the activities or helping at home, hobbies and interests, would be helpful for project personnel. In addition, by this involvement, parents may benefit by some indication of elevated hopes or prospects for their sons and daughters and should become more informed about school and other public agencies from whom they may expect advise and assistance.

Thomas Fleck
Rehabilitation Counselor

VT 017 532

VT 017 532
ROSS, RALPH W., AND OTHERS
A GUIDE FOR STATE-WIDE EVALUATION OF SECONDARY VOCATIONAL EDUCATION PROGRAMS IN OKLAHOMA.

OKLAHOMA STATE DEPT. OF VOCATIONAL AND TECHNICAL EDUCATION, STILLWATER. DIV. OF RESEARCH, PLANNING, AND EVALUATION.
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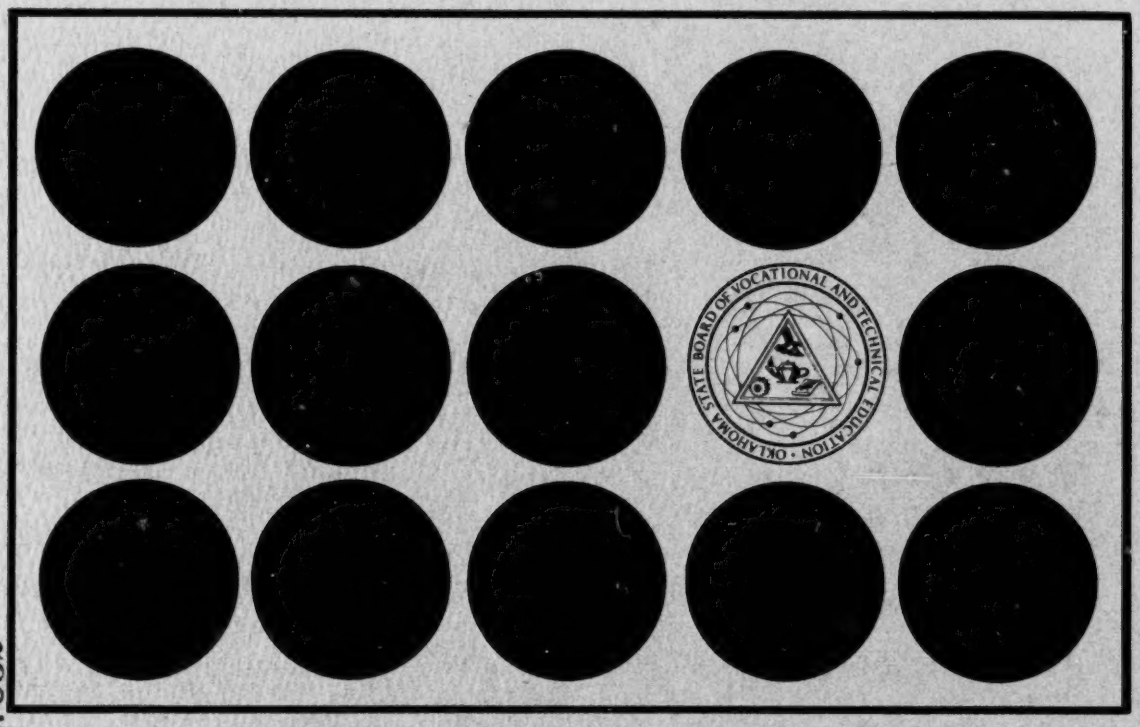
ABSTRACT - DISCUSSED IN THIS DOCUMENT IS OKLAHOMA'S STATE-DIRECTED APPROACH TO EVALUATION. DEVELOPED COOPERATIVELY BY LOCAL TEACHERS, STATE DEPARTMENT STAFF MEMBERS, RESEARCH PERSONNEL, STATE ADVISORY COUNCIL MEMBERS, AND TEACHER EDUCATORS AT THE OKLAHOMA AND CENTRAL STATE UNIVERSITIES, THIS EVALUATION PLAN WAS DESIGNED WITH FOUR OBJECTIVES IN MIND. THOSE OBJECTIVES WERE: (1) TO PROMOTE AND ASSIST WITH THE IMPROVEMENT OF OCCUPATIONAL PROGRAMS AT THE LOCAL LEVEL, (2) TO PROVIDE THE STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION WITH THE NECESSARY DATA UPON WHICH PLANNING OF OCCUPATIONAL EDUCATION PROGRAMS CAN BE BASED, (3) TO PROVIDE THE STATE ADVISORY COUNCIL OF VOCATIONAL AND TECHNICAL EDUCATION WITH EVALUATIVE DATA ON VOCATIONAL AND TECHNICAL PROGRAMS, AND (4) TO ASSURE ACCOUNTABILITY OF FEDERAL AND STATE FUNDS ALLOCATED TO LOCAL PROGRAMS OF OCCUPATIONAL EDUCATION. PHASES OF THE FIVE STEP EVALUATION PROCESS INCLUDE: (1) THE INITIATION PHASE, (2) DISTRIBUTION OF PROGRAM EVALUATION AND SUMMARY EVALUATION INSTRUMENTS, (3) TEAM EVALUATIONS, (4) THE SYNTHESIS PHASE, AND (5) THE REFINEMENT PHASE. TABLES, A SAMPLE QUESTIONNAIRE, AND EVALUATION SCHEDULES ARE APPENDED. (SN)

A Guide for State-Directed Evaluation of Secondary Vocational Education Programs in Oklahoma



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DIVISION OF RESEARCH, PLANNING, AND EVALUATION
STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION STILLWATER, OKLAHOMA

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A GUIDE FOR STATE-WIDE EVALUATION OF SECONDARY VOCATIONAL EDUCATION PROGRAMS IN OKLAHOMA

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Evaluation Unit
Division of Research, Planning, and Evaluation
Oklahoma State Department of Vocational and Technical Education
Stillwater, Oklahoma
August 15, 1972

PREFACE

With increased emphasis on accountability from national, as well as state and local levels, the Oklahoma State Department of Vocational and Technical Education has concentrated its efforts to improve and expand the accountability of its programs by utilizing the resources of the Division of Research, Planning, and Evaluation. Because of increased emphasis in this area, Dr. Bill Stevenson, Head of the Research Division, working closely with Dr. Francis Tuttle, State Director of Vocational and Technical Education, established the Evaluation Unit in August of 1970. At that time, the name of the division was changed to the Division of Research, Planning, and Evaluation.

The material contained in this guide is a state-directed approach to the evaluation of secondary vocational and technical programs. Let it be said that this is only one of the several methods being tried by other states. A great deal has been written by people that are credited to be knowledgeable in evaluation. Arguments for local self-evaluation have considerable merit but, when studied closely, they also disclose weaknesses.

The state-directed approach in Oklahoma will combine the following characteristics: purpose (based on the stated objectives included in this guide); involvement (including local teachers, State Department staff, teacher educators at Oklahoma State University and Central State University, research personnel, and State Advisory Council members); objectivity (separation of supervisory and evaluation activities); validity (validation of evaluation instruments through sound research); and mobility (a characteristic that must be considered if any system is to effect improvement in <u>all</u> vocational and technical programs within a reasonable period of time. In Oklahoma that period of time is five (5) years.) It is felt that the method we have chosen is best to accomplish this goal.

An additional effort will be made to provide evaluative services for those administrators of comprehensive or area vocational-technical schools who discern the need

for an evaluation of their secondary vocational and technical programs during the current school year.

Ralph W. Ross, Coordinator
Evaluation Unit
Division of Research, Planning,
and Evaluation
State Department of Vocational and
Technical Education

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EVALUATION UNIT OBJECTIVES

The Evaluation Unit is an integral part of the Division of Research, Planning, and Evaluation. It has been designated by the State Director of Vocational and Technical Education as the unit responsible for designing evaluation instruments and initiating and coordinating all evaluative activities for secondary vocational programs in Oklahoma. The Evaluation Unit's objectives are as follows:

1. To promote and assist with the improvement of occupational education programs at the local level.
2. To provide the State Department of Vocational and Technical Education with the necessary data upon which planning of occupational education programs can be based.
3. To provide the State Advisory Council of Vocational and Technical Education with data on evaluations of vocational and technical programs.
4. To assure accountability of Federal and State funds allocated to local programs of occupational education.

EXPLANATION OF PROGRAM AREAS

Regular Vocational Programs

Ongoing vocational programs listed in the seven categories below that are not in the Special Program classification shall be evaluated once every five (5) years. State staff shall assist the Evaluation Unit in the evaluation of these programs. The following divisions constitute the whole of regular ongoing programs:

1. Vocational Agriculture Education
2. Home Economics Education
3. Trade and Industrial Education
4. Technical Education
5. Business and Office Education
6. Distributive Education
7. Health Occupations Education

Exemplary Vocational Programs

Exemplary programs funded directly through the U.S. Office of Education must be evaluated by an outside agency (not connected with the organization responsible for supervision of the programs). The Evaluation Unit shall assist the State Supervisor of Exemplary Programs in contracting with an outside agency for evaluation of exemplary programs and in supportive activities. A preliminary report of the evaluation of exemplary programs must be in the U.S. Office of Education before the contract year has terminated.

Special Vocational Programs

Due to the funding procedure for special vocational education programs, evaluation shall be conducted yearly. The Evaluation Unit shall assist State Supervisors, Coordinators, or Project Directors who are charged with the supervision of these programs until such time as the evaluation of Special Programs becomes the responsibility of the Evaluation Unit. This assistance would be in the form of developing evaluation instruments and serving on evaluation teams. The following are considered in the category of Special Vocational Programs and Special Services:

Special Vocational Programs

1. Cooperative Vocational Education (CVE)
2. Coordinated Vocational Educational Training (CVET)
3. Exemplary Programs
4. Disadvantaged and Handicapped Programs

VOCATIONAL EVALUATING PROCESS FOR OKLAHOMA

I. EVALUATION OF SECONDARY VOCATIONAL PROGRAMS

WHAT PROVISIONS IN THE STATE PLAN ARE GIVEN FOR EVALUATING PROGRAMS?

A. Part I - Section 1.51 Program Evaluation, states in part: The State Board of Education, through the State Director of Vocational Education and the vocational education staff members, shall make an evaluation of each local vocational education program and/or its separate division at least once per year. This evaluation shall encompass the education program, its staff members, the service provided by the program and staff, and the activities related to this program, such as advisory committee, administrative, and vocational youth organization.

B. 1.52 (a) The evaluation instrument shall contain parts so that the following items can be scrutinized:

1. Program Goals and Objectives
2. Instructional Program
3. Program Coordination
4. Equipment
5. Facilities
6. Student Testing
7. Vocational Youth Organizations
8. Curriculum Planning
9. Teacher Preparation
10. Program Guidance and Counseling

II. THE EVALUATION PROCESS

A. Phase One - The Initiation Phase includes the designing of a system for A State-Directed Method for the Evaluation of Secondary Vocational Programs in Oklahoma. An analysis of the system includes the following:

1. Objectives of evaluation
2. A model for the evaluation system
3. Design of evaluation instruments
4. Validation of evaluation instruments through research (pilot studies)

5. Selection and scheduling of personnel for evaluation teams
6. Selection and scheduling of secondary vocational programs to be evaluated
7. Orientation of State staff and teacher education personnel on:
   a. Objectives of state-directed evaluation
   b. Evaluation procedures
   c. Schedule of team visits
   d. Procedures for conducting a team visit
   e. Duties of a team chairman
   f. Duties of the team members

B. Phase Two - Distribution of Program Evaluation and Summary Evaluation Instruments. Program Evaluation (objective data) and Summary Evaluation (subjective data) questionnaires are mailed to all secondary vocational and technical programs in September that have been scheduled for an evaluation for the current school year. The questionnaires (2) should be completed by the teacher and returned no later than October 1. Administrative assistance may be necessary to complete question Number One on the Program Evaluation Instrument. Summary Evaluation questionnaires for team members are distributed to team chairmen shortly before the visitation date. Certain schools will be scheduled for North Central Evaluation in the coming school year. Efforts will be made to avoid the possibility of a Vocational-Technical Evaluation Team arriving in the school while North Central evaluations are being conducted.

C. Phase Three - Team Evaluations include a visitation with the local administration explaining the procedures for an evaluation, the purpose of the visit, and the objectives to be accomplished. This is to be followed by an on-site evaluation of the program. Each team member will rate the program on various evaluative criteria contained in the team's questionnaire. Sufficient time should be allowed for a question and answer session between the teacher and team before team members complete the recommendations sections under each major heading of the questionnaire. Team members should complete the questionnaire immediately after leaving the program.

The team(s) is to provide direct feedback to the Superintendent on the major strengths and needs of each vocational program before leaving the school site. Each team chairman is responsible for collecting the evaluation material of his team and submitting it to the Evaluation Unit.

D. Phase Four - Synthesis Phase. Data from the program evaluation instruments submitted by the teacher is assimilated by program area (drafting, home economics useful, etc.). A similar school and state mean on each evaluative criteria with the program area is established. A comparison is then made between local data to similar school norms and also local data to state norms on each criteria. The local-state comparison is used for student follow-up on the program to determine product effectiveness. A mean rating of the team and teacher on each criteria in the Summary Evaluation questionnaire is established to complete a third input to the evaluation of each vocational or technical program. Periodically a correlation will be made between team and teacher responses on each item in the Summary Evaluation questionnaire for the particular program area by district, region, or state. The three inputs just described (1) objective data from the Program Evaluation Instrument to compare local conditions to similar schools and state norms, (2) comparison of local to state averages on student follow-up by program area, and (3) subjective data from the Summary Evaluation Instrument completed by the team and teacher will constitute the major thrust in evaluating local vocational and technical programs. After careful study and comparison of all criteria, a final report is drafted by the Evaluation Unit. Copies of evaluation reports will be submitted to the State Director of Vocational and Technical Education, State Supervisors, the team members, and the local school.

E. Phase Five - Refinement Phase. Any particular refinement of evaluation instruments or of the evaluation process is conducted at this point. The refinement phase will be effected at the end of each school year, and the system will revolve again to phase one during the summer months before the summer conference convenes.

Who Will Serve On Evaluation Teams?

State supervisors representing the various divisions of vocational and technical education, other state supportive staff, and the vocational-technical teacher educators will constitute the membership of evaluation teams. Members from local advisory councils to serve on evaluation teams will be encouraged whenever possible.

The Team Chairman

The duties of the team chairman shall include directing the orientation with the local administrators and teachers; directing activities of the team during the evaluation; providing direct feedback to the superintendent after the program visitation; summarizing and submitting a preliminary report with the completed evaluation material to the Evaluation Unit.

(NOTE: Should there be more than one team visiting a school, both teams shall arrive at the same time and one chairman shall conduct the orientation process.)

Why Should Evaluation Be Given Special Attention

Evaluation is important to determine the efficiency and effectiveness of vocational programs in meeting their stated objectives. A process-product evaluation will be used and objectives will be included when they are both operationally and behaviorally defined at the local level.

CRITERIA FOR PROGRAM REVIEW

I. A program will warrant review by Dr. Francis Tuttle, State Director of Vocational and Technical Education, and the State Supervisor of the program if all of the following occur:

The program is in the bottom twenty-five (25) percent of:

a. Rank order by team-teacher (OAR) ratings*
b. Rank order by product index (PI)

If a program scores in the bottom twenty-five percent of both items Ia and Ib above, the program will be referred to the State Director and the appropriate State Supervisor.

*Rank order of all mean ratings (team and teacher's overall average rating) of all vocational programs evaluated during school year 72-73.

STATE DEPARTMENT OF VOCATIONAL & TECHNICAL EDUCATION

DIVISION OF RESEARCH, PLANNING, AND EVALUATION
EVALUATION UNIT

** STUDENT FOLLOW-UP REPORT **

School Code 000111222
Name Stevenson High School
Program Code 170302
Name Auto Mechanics

School Year 71-72

DESCRIPTION	SCHOOL NUMBER	SCHOOL PERCENT	STATE PERCENT
TOTAL GRADUATES	19	52.8	30.9
GRADUATES AVAILABLE FOR PLACEMENT	11	61.1	57.0
Graduates employed in related occupations	9	81.8	66.7
Graduates employed in non-related occupations	2	18.2	27.3
Graduates seeking employment			3.7
Graduates employed part-time			2.3
GRADUATES NOT AVAILABLE FOR EMPLOYMENT	7	38.9	43.0
Graduates continuing related education	2	28.6	41.1
Graduates continuing non-related education	1	14.3	19.0
Graduates in armed forces	4	57.1	27.6
Graduates not in labor force			.6
UNKNOWN			11.7
STUDENT DROPOUT	5	13.9	10.4
Dropout employed in related occupations	2	40.0	14.5
RETENTION	3	50.0	
PRODUCT INDEX		.67	

Total Graduates percentages and Student Dropout percentages are based on completion card returns only.

Graduates Available for Placement percentages and Graduates Not Available for Employment percentages and each respective sub-category are based on follow-up card returns only.

ESTIMATED TOTAL NUMBER OF SECONDARY PROGRAMS BY DIVISION AND NUMBER TO BE EVALUATED DURING 1972-73

Division	Estimated Total Programs	Number of Programs Evaluated 72-73
Agriculture	391	71
Home Economics	399	75
Trade and Industrial Education	412	91
Technical Education	4	0
Health Occupations	22	5
Distributive Education	60	18
Business and Office	94	16
Cooperative Voc. Ed.	28	5
CVET	35	5
TOTALS	1445	286

BY COUNTY
EVALUATION SCHEDULE FOR
SCHOOL YEAR
72-73

Counties:

Midwest City Schools (September)
LeFlore (October)
Pittsburg (November)
Logan (December)
Pushmataha (December)
Kingfisher (December)
Kay (January)
Craig (January)
Hughes (January)

Counties:

Johnston (February)
Jefferson (February)
Haskell (February)
Latimer (February)
Harper (February)
Muskogee (March)
Classen H.S. (April)
J. Marshall H.S. (April)
U. S. Grant H.S. (April)
Douglass H.S. (April)

SUMMARY EVALUATION QUESTIONNAIRE

For State Dept. Use Only

Name of School _____ 64-72 _____

Name of Teacher _____

Name of Program _____ 73-78 _____

Date _____ 79-80 _____

INSTRUCTIONS

This instrument is to be completed by the vocational teacher as a part of the evaluation of his program. Read each question carefully and check the appropriate rating. THIS QUESTIONNAIRE MUST BE RETURNED BEFORE OCTOBER 15, 1972.

Rating Scale

0 = Not applicable
1 = Poor, major improvement is needed
2 = Below average, improvement needed
3 = Average
4 = Excellent, well done
5 = Superior, outstanding

	1	2	3	4	5	0
1. Administrative personnel encourage and support in-service training for teachers						
2. Administrative personnel allow in-school release time for teachers to visit vocational programs in other schools						
3. Administrative personnel encourage teachers to replace worn or obsolete equipment						
4. State supervisory and consultant personnel give assistance to local administrators and teachers in program projection, planning, and evaluation . .						
5. State supervisory and consultant personnel's assistance was satisfactory during the last school year						
6. The vocational teacher has the personal qualifications to be an effective teacher. (the ability to lead, organize, maintain class control, supervise, communicate, etc.).						

		1	2	3	4	5	0
7.	The vocational teacher(s) has the necessary background of related work experience						
8.	The vocational teacher participates in school activities (youth organization meetings, etc.) . .						
9.	The vocational teacher participates in community activities						
10.	The vocational teacher takes active measures to further his professional growth and development.						
11.	The vocational teacher's methods of teaching are adaptable to individual needs, interests, and rates of learning						
12.	The vocational teacher(s) prepares and carries out a plan of continuous evaluation for program improvement and development (in-house evaluation)						
13.	There is a planned program which is followed for the periodic revision of courses of study in light of changing community, socioeconomic, mechanical, and technological changes						
14.	Education in your vocational program provides students with a range of occupational goals . .						
15.	The curriculum for your vocational program is concerned with the overall development of each pupil						
16.	There is close coordination and cooperation between the vocational program and the related academic and guidance staff of the school system (or feeder schools for AVTS)						
17.	The State course of study for your particular program area is followed						
18.	There is a "common core" of learnings which is stressed for all vocational students and related materials are given to individual students in their areas of interest in your program.						
19.	The core of learnings in the vocational program develops understandings and skills necessary for all students for entry-level employment						
20.	Related study materials are available for student use in all areas of training						

		1	2	3	4	5	0
21.	The vocational teacher has access to and uses supplementary materials of instruction						
22.	The vocational teacher selects effective materials and resources						
23.	The vocational teacher is acquainted with the instructional materials before presenting them to the class						
24.	The vocational teacher uses the instructional materials effectively						
25.	Adequate and appropriate instructional supplies are provided for the vocational program						
26.	The Vocational Department considers evaluation to be an integral part of instruction						
27.	All students are occupied at a definite assignment						
28.	Only the minimum number of students is assigned to each task assignment						
29.	Adequate library facilities are available for the vocational teacher's and students' needs						
30.	Library and instructional materials are filed in such a manner that they are readily accessible to the students or instructor						
31.	The vocational teacher becomes familiar with the business community through surveys (questionnaires, telephone contacts, or personal interviews)						
32.	The vocational teacher enriches the curriculum with related resources (guest speakers, etc.) . .						
33.	Vocational classes visit businesses and industries related to their occupation						
34.	A representative formal advisory committee assists in improving and expanding the vocational program						
35.	The advisory committee meets as a group in scheduled meetings						

		1	2	3	4	5	0
36.	Informative materials enlighten educators, parents, students, and the general public concerning the vocational program						
37.	Informational materials are made available to the public in a variety of ways (radio, TV, etc.) . .						
38.	Students are tested on aptitude, interest, and ability prior to entering the vocational program .						
39.	Guidance is a part of the orientation of pupils entering the vocational program						
40.	Guidance is a part of the learning activities of pupils in the vocational classes						
41.	Machines and equipment are arranged in such a manner as to emphasize safety, function, and class control						
42.	The size and quality of the classroom and/or shop are adequate to have an effective program in light of its philosophy and objectives						
43.	The extent and quality of the equipment are adequate to have an effective program in keeping with the philosophy and objectives						
44.	Materials and supplies are stored in a systematic way						
45.	An ample amount of storage space is available for supplies, equipment, and projects of the program						
46.	Sufficient funds are made available when the purchase of new equipment is needed						
47.	Sufficient funds are made available for immediate repairs to malfunctioning equipment						
48.	To what extent is obsolete equipment replaced in the program						
49.	To what extent is the equipment modern and representative of that being used in industries representative in your field						
50.	All equipment is operative and in good working order						

		1	2	3	4	5	0
51.	The classroom and/or shop is orderly and attractive and provides an example of good housekeeping						
52.	There is an organized plan for the placement of graduates seeking employment						
53.	The teacher assists graduates in finding job opportunities						
54.	There is an organized plan for the placement of students seeking employment prior to program completion						
55.	The teacher assists students in finding job opportunities (prior to program completion) . .						
56.	Information is maintained on the occupational status of former students						
57.	The vocational teacher(s) sponsors a youth organization in which students plan the organization and activities						
58.	A majority of the total class are members of the youth organization						
59.	Club meetings are held regularly with students conducting the proceedings						
60.	Committees are formed and make contributions to the improvement of the youth organization, school, and community						
61.	Opportunity for all members to serve on committees is provided						
62.	To what extent did members participate in local, district, and state activities						
63.	The club enriches the instructional program in the attainment of the primary program objectives .						
64.	List any outstanding honors or achievements of the youth organization for this school year						

SUMMARY EVALUATION QUESTIONNAIRE

Commendations or Strengths

(List below any strengths of the program. Use additional pages if necessary.)

Recommendations or Needs

(List below any needs of the program. Use additional pages if necessary.)

SUGGESTIONS FOR

PROGRAM EVALUATION QUESTIONNAIRE

Suggestions on completing the Program (hard data) Evaluation Questionnaire.

PLEASE READ CAREFULLY

1. Assistance will probably be needed from school personnel in charge of financial records in order to answer questions 1, 2, and 3.

2. In order to answer question 4, the teacher should make a list of new equipment needed plus equipment needed for replacement purposes and refer to equipment catalogs or other sources for prices. Total the cost of all equipment needed and write the appropriate answer in question 4. Please be realistic and accurate in that this information will be used in the evaluation of your program.

3. Question 5 is probably the most difficult question to answer, especially for teachers in older programs. Some schools require that an equipment inventory be kept that shows the unit price for individual pieces of equipment or sets of small equipment. If the item of equipment is five (5) years or less in age, use that price as the current value. If the equipment is over five years old and/or records cannot be located indicating what was paid for the equipment, the teacher should assign what he thinks the current value might be. Total the value of all equipment in your inventory and circle the appropriate response in question 5. Please include the value of state-owned, 50/50 matching, and locally owned equipment (all). The Evaluation Unit will compare this data with the value of equipment in programs of this type in similar schools and the state average. Please be as accurate as possible.

4. It is hoped that questions six through twenty (6-20) will not present a problem to the teacher. Should you have any questions, please call:

Ralph W. Ross, Coordinator
Evaluation Unit
Division of Research, Planning,
and Evaluation
State Department of Vocational
and Technical Education
Telephone: 1-(405)-377-2000, Ext. 280

Note: If this is a first-year program (new programs only) the teacher should check NOT APPLICABLE on questions 1, 2, 3, 15, 18, and 19.

PROGRAM EVALUATION

QUESTIONNAIRE

Name of School _____

Name of Teacher _____

Name of Program _____

Date _____

INSTRUCTIONS

This instrument is to be completed by the vocational teacher as a part of the evaluation of his program. Read each question carefully and circle the appropriate answers. THIS QUESTIONNAIRE MUST BE RETURNED BEFORE OCTOBER 15, 1972.

SUPPLIES SECTION

1. What was the total amount of funds spent on instructional supplies and consumable supplies for your program during the last fiscal year.

ANSWER:

01	$100 or less	21	$2001 - $2100
02	$101 - $200	22	$2101 - $2200
03	$201 - $300	23	$2201 - $2300
04	$301 - $400	24	$2301 - $2400
05	$401 - $500	25	$2401 - $2500
06	$501 - $600	26	$2501 - $3000
07	$601 - $700	27	$3001 - $3500
08	$701 - $800	28	$3501 - $4000
09	$801 - $900	29	$4001 - $4500
10	$901 - $1000	30	$4501 - $5000
11	$1001 - $1100	31	$5001 - $5500
12	$1101 - $1200	32	$5501 - $6000
13	$1201 - $1300	33	$6001 - $6500
14	$1301 - $1400	34	$6501 - $7000
15	$1401 - $1500	35	$7001 - $7500
16	$1501 - $1600	36	$7501 - $8000
17	$1601 - $1700	37	$8001 - $8500
18	$1701 - $1800	38	$8501 - $9000
19	$1801 - $1900	39	$9001 - $9500
20	$1901 - $2000	40	$9501 - up
		41	Not applicable

2. What was the total amount of funds received for services rendered during the last fiscal year for your program? (NOTE: Sale of projects, shop fees, services, etc.)

ANSWER:

01	None	12	$1001 - $1500
02	0 - $50	13	$1501 - $2000
03	$51 - $100	14	$2001 - $3000
04	$101 - $200	15	$3001 - $4000
05	$201 - $300	16	$4001 - $5000
06	$301 - $400	17	$5001 - $6000
07	$401 - $500	18	$6001 - $7000
08	$501 - $600	19	$7001 - $8000
09	$601 - $700	20	$8001 - $9000
10	$701 - $800	21	$9001 - $10,000
11	$801 - $1000	22	$10,001 - above
		23	Not Applicable

EQUIPMENT SECTION

3. What has been the total amount of funds expended for the purchase of new equipment (small equipment, large equipment, audiovisual equipment, etc.) in your vocational or technical program in the last fiscal year?

ANSWER:

01	Less than $100	16	$2801 - $3000
02	$101 - $200	17	$3001 - $3200
03	$201 - $400	18	$3201 - $3400
04	$401 - $600	19	$3401 - $3600
05	$601 - $800	20	$3601 - $3800
06	$801 - $1000	21	$3801 - $4000
07	$1001 - $1200	22	$4001 - $4200
08	$1201 - $1400	23	$4201 - $4400
09	$1401 - $1600	24	$4401 - $4600
10	$1601 - $1800	25	$4601 - $4800
11	$1801 - $2000	26	$4801 - $5000
12	$2001 - $2200	27	$5001 - $5500
13	$2201 - $2400	28	$5501 - $6000
14	$2401 - $2600	29	$6001 - up
15	$2601 - $2800	30	Not applicable

4. Indicate the cost of new equipment needed in your vocational or technical program. (Note: Include the cost for replacement of obsolete equipment if it is needed.)

ANSWER:

01	$100 or less	21	$2001 - $2100
02	$101 - $200	22	$2101 - $2200
03	$201 - $300	23	$2201 - $2300
04	$301 - $400	24	$2301 - $2400
05	$401 - $500	25	$2401 - $2500
06	$501 - $600	26	$2501 - $3000
07	$601 - $700	27	$3001 - $3500
08	$701 - $800	28	$3501 - $4000
09	$801 - $900	29	$4001 - $4500
10	$901 - $1000	30	$4501 - $5000
11	$1001 - $1100	31	$5001 - $5500
12	$1101 - $1200	32	$5501 - $6000
13	$1201 - $1300	33	$6001 - $6500
14	$1301 - $1400	34	$6501 - $7000
15	$1401 - $1500	35	$7001 - $7500
16	$1501 - $1600	36	$7501 - $8000
17	$1601 - $1700	37	$8001 - $8500
18	$1701 - $1800	38	$8501 - $9000
19	$1801 - $1900	39	$9001 - $9500
20	$1901 - $2000	40	$9501 - up
		41	Not applicable

5. Indicate the total present value of all equipment in your shop or lab. (Note: Machines, benches, chairs, desks, textbooks, audiovisual equipment, etc.)

ANSWER:

01	$100 or less	24	$7501 - $8000
02	$101 - $300	25	$8001 - $8500
03	$301 - $500	26	$8501 - $9000
04	$501 - $700	27	$9001 - $9500
05	$701 - $900	28	$9501 - $10,000
06	$901 - $1100	29	$10,001 - $10,500
07	$1101 - $1300	30	$10,501 - $11,000
08	$1301 - $1500	31	$11,001 - $11,500
09	$1501 - $1700	32	$11,501 - $12,000
10	$1701 - $1900	33	$12,001 - $13,000
11	$1901 - $2100	34	$13,001 - $15,000
12	$2101 - $2400	35	$15,001 - $18,000
13	$2401 - $2700	36	$18,001 - $22,000
14	$2701 - $3000	37	$22,001 - $28,000
15	$3001 - $3500	38	$28,001 - $36,000
16	$3501 - $4000	39	$36,001 - $46,000
17	$4001 - $4500	40	$46,001 - $56,000
18	$4501 - $5000	41	$56,001 - $66,000
19	$5001 - $5500	42	$66,001 - $76,000
20	$5501 - $6000	43	$76,001 - $86,000
21	$6001 - $6500	44	$86,001 - $96,000
22	$6501 - $7000	45	$96,001 - above
23	$7001 - $7500		

FACILITY SECTION

6. Indicate the year in which your facility was constructed.

ANSWER:

01	1972 to present	15	1957 - 1958
02	1970 - 1971	16	1956 - 1957
03	1969 - 1970	17	1955 - 1956
04	1968 - 1969	18	1954 - 1955
05	1967 - 1968	19	1953 - 1954
06	1966 - 1967	20	1952 - 1953
07	1965 - 1966	21	1951 - 1952
08	1964 - 1965	22	1950 - 1951
09	1963 - 1964	23	1945 - 1949
10	1962 - 1963	24	1940 - 1944
11	1961 - 1962	25	1930 - 1939
12	1960 - 1961	26	1920 - 1929
13	1959 - 1960	27	Prior to 1920
14	1958 - 1959		

7. What is the present condition of your facilities?

ANSWER:

01	Excellent
02	Good
03	Fair
04	Poor

8. What is the total square footage of your shop, classroom, toolroom, etc.?

ANSWER:

01	1200 Sq. Ft. or less	16	4001 - 4200
02	1201 - 1400	17	4201 - 4400
03	1401 - 1600	18	4401 - 4600
04	1601 - 1800	19	4601 - 4800
05	1801 - 2000	20	4801 - 5000
06	2001 - 2200	21	5001 - 5300
07	2201 - 2400	22	5301 - 5600
08	2401 - 2600	23	5601 - 5900
09	2601 - 2800	24	5901 - 6200
10	2801 - 3000	25	6201 - 6500
11	3001 - 3200	26	6501 - 7000
12	3201 - 3400	27	7001 - 7500
13	3401 - 3600	28	7501 - 8000
14	3601 - 3800	29	8001 - up
15	3801 - 4000		

STAFF SECTION

9. How many years have you taught a vocational or technical subject?

ANSWER:

01	Less than one year	12	Eleven years
02	One year	13	Twelve years
03	Two years	14	Thirteen years
04	Three years	15	Fourteen years
05	Four years	16	Fifteen years
06	Five years	17	Sixteen years
07	Six years	18	Seventeen years
08	Seven years	19	Eighteen years
09	Eight years	20	Nineteen years
10	Nine years	21	Twenty years
11	Ten years	22	Twenty-one or more years

10. How long have you taught in your present position?

ANSWER:

01	Less than one year	12	Eleven years
02	One year	13	Twelve years
03	Two years	14	Thirteen years
04	Three years	15	Fourteen years
05	Four years	16	Fifteen years
06	Five years	17	Sixteen years
07	Six years	18	Seventeen years
08	Seven years	19	Eighteen years
09	Eight years	20	Nineteen years
10	Nine years	21	Twenty years
11	Ten years	22	Twenty-one or more years

11. When was the last year you updated your skill experience by either full-time employment, part-time employment or by in-service training in the area which you teach? (Summer or after school hours)

ANSWER:
01 This year
02 One year ago
03 Two years ago
04 Three years ago
05 More than three years ago
06 Does not apply

12. When was the last year you were enrolled in a professional class (college)?

ANSWER:
01 This year
02 One year ago
03 Two years ago
04 Three years ago
05 More than three years ago

13. Indicate the highest degree level you have attained at the present time.

ANSWER:
01 Non-degree
02 Associate degree
03 Bachelors Degree
04 Masters Degree
05 Specialist Degree
06 Doctorate

BUSINESS RELATIONS SECTION

14. How many business firms or employers that are related to your vocational or technical program do you know that will offer full-time employment to your graduates? (Note: Within a 75-mile radius)

ANSWER:
01 One
02 Two
03 Three
04 Four
05 Five
06 Six
07 Seven
08 Eight
09 Nine
10 Ten
11 Eleven
12 Twelve
13 Thirteen
14 Fourteen
15 Fifteen
16 Sixteen - Twenty
17 Twenty-one - Thirty
18 Thirty-one - Forty
19 Forty-one - Fifty
20 None
21 Not applicable

15. How many employers related to your vocational or technical program have inquired about hiring graduates on a full-time basis during the last fiscal year.

ANSWER:
01 One
02 Two
03 Three
04 Four
05 Five
06 Six
07 Seven
08 Eight
09 Nine
10 Ten
11 Eleven
12 Twelve
13 Thirteen
14 Fourteen
15 Fifteen or more
16 None
17 Not applicable

16. Upon graduation from high school, release from military service or completion of post secondary education, what percent of the total students enrolled have as their objective entrance into full-time employment in the occupation or related occupation for which they are being trained? (Note: Please poll all classes and calculate the overall percentage - Please read this question to the class)

ANSWER:
01 10% - 20%
02 21% - 30%
03 31% - 40%
04 41% - 50%
05 51% - 60%
06 61% - 70%
07 71% - 80%
08 81% - 90%
09 91% - 100%
10 None
11 Not applicable

17. What percent of the upcoming graduates in your program will move or commute up to 75 miles, if employment is available? (Note: Please poll all seniors and calculate percentage)

ANSWER:
01 0% - 10%
02 11% - 20%
03 21% - 30%
04 31% - 40%
05 41% - 50%
06 51% - 60%
07 61% - 70%
08 71% - 80%
09 81% - 90%
10 91% - 100%

18. How many times during the last full fiscal year did you visit related business firms with your class?

ANSWER:
01 Once
02 Twice
03 Three times
04 Four times
05 Five times
06 Six times
07 Seven times
08 Eight times
09 Nine times
10 Ten times
11 Eleven times
12 Twelve times
13 Thirteen times
14 Fourteen times
15 Fifteen or more times
16 None
17 Not applicable

DISTRICT SUPERVISORY VISITS

19. How many times was your district-area supervisor in your classroom, shop or lab or accompanied you in visiting training stations during the last fiscal year? (Note: Do not count contest or P.I. meetings.)

ANSWER
01 Once
02 Twice
03 Three times
04 Four times
05 Five times
06 Six times
07 Seven times
08 Eight times
09 Nine times
10 Ten times
11 None
12 Not applicable

YOUTH ORGANIZATIONS

20. Circle the appropriate number if you have one of the following organizations:

ANSWER:
01 DECA - Distributive Education Clubs of America
02 FFA - Future Farmers of America
03 FBLA - Future Business Leaders of America
04 VICA - Vocational Industrial Clubs of America
05 FHA - Future Homemakers of America
06 None

PROGRAM EVALUATION SCHEDULE FOR

September 19-22, 1972

Schools	Team #	Evaluators	TU-19 am	TU-19 pm	W-20 am	W-20 pm	TH-21 am	TH-21 pm	F-22 am	F-22 pm	Estimated Evaluation Time	Team Chairman
Midwest City (H. S.)	1	R. Dreessen					x	x			Team #1	Martha Frizzell
	1	N. Johnson	x	x	x	x	x	x				
Midwest City (Vo-Tech H. S.)	1	V. Van Hook	x	x	x	x	x				41 Programs	
	1	M. Frizzell			x	x	x	x				Note:
Del City	1	C. Hamer	x	x							3 days	All personnel evaluating on Tuesday meet with the administration at 8:00
	1	R. Ross			x	x						
Carl Albert (H. S.)	1	L. Catherwood			x	x	x	x				
	1	G. Isaacs			x	x						
Carl Albert (J. H. S.)	1	J. Herron					x	x				
	1	W. Penner					x	x				
	1	J. Berry	x	x	x	x	x	x				
	1	J. Hefner				x	x	x				
	1	L. Patton	x	x	x	x	x	x				
	1	Teacher Educator	x	x		x						
	1	Teacher Educator					x	x				

County: Oklahoma

Number of Schools Evaluated in County 5

Number of Secondary Vocational Programs Evaluated in County

Agriculture	1	Distributive Education	4
Home Economics	9	Business & Office	4
Trade & Industrial	17	Cooperative Voc. Ed.	0
Technical	0	CVET	3
Health Occupations	3	Total	41

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Midwest City High School	Dist. Ed	1	Patton, Johnson	Sept. 19, A.M. 1/4 Day	1
	Home Economics		Johnson, Patton	Sept. 19, A.M. 1/4 Day	1
	Home Economics		Johnson, Patton	Sept. 19, P.M. 1/4 Day	1
	Home Economics		Johnson, Patton	Sept. 19, P.M. 1/4 Day	1
	Business & Office (COE)		Van Hook, Hamer	Sept. 19, P.M. 1/4 Day	1
	Practical Nursing (3)		Hamer, Van Hook	Sept. 19, A.M. 1/2 Day	1
	Health Services Career		Hamer, Van Hook	Sept. 19, P.M. 1/4 Day	1
	Business & Office (COE)		Van Hook, Johnson	Sept. 21, A.M. 1/2 Day	1
Midwest City Vocational High School	Home Economics	1	Johnson, Catherwood	Sept. 20, A.M. 1/2 Day	1
	Home Economics		Johnson, Catherwood	Sept. 20, P.M. 1/2 Day	1
	Air Cond. & Ref.		Hefner, Isaacs	Sept. 20, P.M. 1/4 Day	1
	Auto Body		Hefner, Isaacs	Sept. 20, P.M. 1/4 Day	1
	Auto Mech.		Berry, Isaacs	Sept. 20, A.M. 1/4 Day	1
	Auto Mech.		Berry, Isaacs	Sept. 20, A.M. 1/4 Day	1
	Auto Mech.		Berry, Penner	Sept. 21, A.M. 1/4 Day	1
	Aircraft Mech.		Berry, Penner	Sept. 21, A.M. 1/4 Day	1
	Drafting		Berry, Penner	Sept. 21, P.M. 1/2 Day	1
	Upholstery		Hefner, Teacher Ed	Sept. 21, A.M. 1/4 Day	1
	Printing		Hefner, Teacher Ed	Sept. 21, A.M. 1/4 Day	1
	Welding		Hefner, Teacher Ed	Sept. 21, P.M. 1/4 Day	1
	Cosmetology		Hefner, Teacher Ed	Sept. 21, P.M. 1/4 Day	1
	Cosmetology		Berry, Teacher Ed	Sept. 19, A.M. 1/4 Day	1
	Carpentry		Berry, Teacher Ed	Sept. 20, P.M. 1/4 Day	1

County: Oklahoma

Number of Schools Evaluated in County 5

Number of Secondary Vocational Programs Evaluated in County

Agriculture	1	Distributive Education	4
Home Economics	9	Business & Office	4
Trade & Industrial	17	Cooperative Voc. Ed.	0
Technical	0	CVET	3
Health Occupations	3	Total	41

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Midwest City Vocational High School (continued)	Electricity		Berry, Teacher Ed	Sept. 20, P.M. 1/4 Day	1
	Cosmetology	1	Berry, Teacher Ed	Sept. 19, A.M. 1/4 Day	1
	Electronics		Berry, Teacher Ed	Sept. 19, P.M. 1/4 Day	1
	Electronics		Berry, Teacher Ed	Sept. 19, P.M. 1/4 Day	1
MWC Del City	Business & Office (COE)	1	Van Hook, Patton	Sept. 20, P.M. 1/4 Day	1
	Business & Office (COE)		Van Hook, Patton	Sept. 20, P.M. 1/4 Day	1
	Distributive Ed		Patton, Van Hook	Sept. 20, A.M. 1/4 Day	1
	Distributive Ed (CVE)		Patton, Van Hook	Sept. 20, A.M. 1/4 Day	1
	Home Economics		Frizzell, Ross	Sept. 20, A.M. 1/2 Day	1
	Home Economics		Frizzell, Ross	Sept. 20, P.M. 1/2 Day	1
	Home Economics		Frizzell, Johnson	Sept. 21, P.M. 1/2 Day	1
MWC Carl Albert	Agriculture	1	Dreessen, Patton	Sept. 21, A.M. 1/2 Day	1
	Distributive Ed		Patton, Dreessen	Sept. 21, P.M. 1/2 Day	1
	Home Economics		Frizzell, Catherwood	Sept. 21, A.M. 1/2 Day	1
MWC Carl Albert Jr.	Home Economics	1	Johnson, Herron	Sept. 21, A.M. 1/4 Day	1
	CVET (**H.E.)		Johnson, Herron	Sept. 21, A.M. 1/4 Day	1
	CVET (Mech)		Herron, Catherwood	Sept. 21, P.M. 1/4 Day	1
	CVET (Const)		Herron, Catherwood	Sept. 21, P.M. 1/4 Day	1

PROGRAM EVALUATION SCHEDULE FOR

October 24-27, 1972

Schools	Team #	Evaluators	TU-24 am	TU-24 pm	W-25 am	W-25 pm	TH-26 am	TH-26 pm	F-27 am	F-27 pm	Estimated Evaluation Time	Team Chairman
Kiamichi AVTS (Poteau)	1	R. Dreessen	x	x	x	x	x	x	x		32 programs	Rex Moore
	1	R. Moore	x	x	x							
Wister	1	M. J. DeBenning	x	x	x	x					3 1/2 days	
	1	C. Hamer	x	x								
Poteau	1	H. Robinson	x	x	x							
	1	C. Collins	x	x	x	x	x	x	x			
Cameron	1	H. Jensen	x	x	x	x	x	x	x			
	1	J. Thompson			x	x	x	x	x			
Howe	1	C. Haraughty	x	x	x	x						
Spiro												
Heavener												
Panama												
Bokoshe												
LeFlore												Note: One person serving on sub-teams (two-man teams) will assume the role of Team Chairman when visiting the administration.
Talihina												
Whitesboro												

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County: LeFlore

Number of Schools Evaluated in County -13

Number of Secondary Vocational Programs Evaluated in County

Agriculture	11	Distributive Education	1
Home Economics	10	Business & Office	1
Trade & Industrial	7	Cooperative Voc. Ed.	1
Technical	0	CVET	0
Health Occupations	1	Total	32

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Kiamichi AVTS	Business & Office (Gen Clerk)	1	Moore, Collins	Oct. 24, A.M. 1/2 Day	1
	Distributive Ed		DeBenning, Hamer	Oct. 24, A.M. 1/2 Day	1
	Health Ser. Occ.		Hamer, DeBenning	Oct. 24, P.M. 1/2 Day	1
	Air Cond. & Ref.		Haraughty, Robinson	Oct. 24, A.M. 1/4 Day	1
	Carpentry		Haraughty, Robinson	Oct. 24, A.M. 1/4 Day	1
	Farm Equip. Rep.		Haraughty, Robinson	Oct. 24, P.M. 1/4 Day	1
	Plumbing		Haraughty, Robinson	Oct. 24, P.M. 1/4 Day	1
Wister	Agriculture	1	Collins, Moore	Oct. 24, P.M. 1/2 Day	1
Poteau	Agriculture	1	Dreessen, Jensen	Oct. 24, A.M. 1/4 Day	1
	Home Economics		Jensen, Dreessen	Oct. 24, A.M. 1/4 Day	1
Cameron	Agriculture	1	Dreessen, Jensen	Oct. 24, P.M. 1/4 Day	1
	Home Economics		Jensen, Dreessen	Oct. 24, P.M. 1/4 Day	1
Poteau	Auto Mechanics	1	Haraughty, DeBenning	Oct. 25, A.M. 1/4 Day	1
	Cabinetmaking		Haraughty, DeBenning	Oct. 25, A.M. 1/4 Day	1
Howe	Agriculture	1	Dreessen, Jensen	Oct. 25, A.M. 1/4 Day	1
	Home Economics		Jensen, Dreessen	Oct. 25, A.M. 1/4 Day	1
Spiro	Agriculture (2)	1	Collins, Thompson	Oct. 25, A.M. 1/2 Day	1
	Home Economics		Thompson, Collins	Oct. 25, P.M. 1/2 Day	1

County: LeFlore

Number of Schools Evaluated in County 13

Number of Secondary Vocational Programs Evaluated in County

Agriculture	11	Distributive Education	1
Home Economics	10	Business & Office	1
Trade & Industrial	7	Cooperative Voc. Ed.	1
Technical	0	CVET	0
Health Occupations	1	Total	32

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Heavener	Agriculture	1	Dreessen, Jensen	Oct. 25, P.M. 1/4 Day	1
	Home Economics		Jensen, Dreessen	Oct. 25, P.M. 1/4 Day	1
	Cabinetmaking		Haraughty, DeBenning	Oct. 25, P.M. 1/2 Day	1
Kiamichi AVTS (Talihina)	Cooperative Voc. Ed.	1	Robinson, Moore	Oct. 25, A.M. 1/2 Day	1
Panama	Agriculture(2)	1	Collins, Thompson	Oct. 26, A.M. 1/2 Day	1
	Home Economics		Thompson, Collins	Oct. 26, P.M. 1/2 Day	1
Bokoshe	Agriculture	1	Dreessen, Jensen	Oct. 26, A.M. 1/4 Day	1
	Home Economics		Jensen, Dreessen	Oct. 26, A.M. 1/4 Day	1
LeFlore	Agriculture	1	Dreessen, Jensen	Oct. 26, P.M. 1/4 Day	1
	Home Economics		Jensen, Dreessen	Oct. 26, P.M. 1/4 Day	1
Talihina	Agriculture	1	Collins, Thompson	Oct. 27, A.M. 1/4 Day	1
	Home Economics		Thompson, Collins	Oct. 27, A.M. 1/4 Day	1
Whitesboro	Agriculture	1	Dreessen, Jensen	Oct. 27, A.M. 1/4 Day	1
	Home Economics		Jensen, Dreessen	Oct. 27, A.M. 1/4 Day	1

PROGRAM EVALUATION SCHEDULE FOR

November 14-17, 1972

Schools	Team #	Evaluators	TU-14 am	TU-14 pm	W-15 am	W-15 pm	TH-16 am	TH-16 pm	F-17 am	F-17 pm	Estimated Evaluation Time	Team Chairman
Kiamichi AVTS (McAlester)	1	D. Pierce	x	x	x	x	x	x			32 programs	Wanda Wilson
	1	P. Jamison			x							
McAlester	1	W. Wilson	x	x	x	x	x	x	x		4 days	
	1	M. J. DeBenning	x	x	x							
Canadian	1	R. Ross			x	x	x	x	x			
	1	D. Brown	x	x	x	x	x	x	x	x		
Quinton	1	J. Berry	x	x	x	x	x	x				
	1	D. Reeder	x	x	x	x						
Crowder	1	B. Patton					x	x	x	x		
Indianola												
Kiowa												
Savannah												
Hartshorne												Note: One person serving on sub-teams (two-man teams) will assume the role of Team Chairman when visiting the administration.
Haileyville												

County: Pittsburg

Number of Schools Evaluated in County -10

Number of Secondary Vocational Programs Evaluated in County

Agriculture	8	Distributive Education	1
Home Economics	10	Business & Office	2
Trade & Industrial	10	Cooperative Voc. Ed.	0
Technical	0	CVET	0
Health Occupations	1	Total	32

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Kiamichi AVTS	Business & Office (Graphic Arts)	1	Pierce, Berry	Nov. 14, 1/3 Day	1
	Business & Office (Gen. Clerical)		Pierce, Berry	Nov. 14, 1/3 Day	1
	Health Services Occupations		Jamison, DeBenning	Nov. 15, A.M. 1/2 Day	1
	**Home Economics		Wilson, DeBenning	Nov. 14, A.M. 1/4 Day	1
	**Home Economics		Wilson, DeBenning	Nov. 14, A.M. 1/4 Day	1
	Air Cond. & Ref.		Berry, Pierce	Nov. 14, 1/3 Day	1
	Auto Mechanics		Berry, Pierce	Nov. 15, 1/3 Day	1
	Carpentry		Berry, Pierce	Nov. 15, 1/3 Day	1
	Cosmetology		Berry, Pierce	Nov. 15, 1/3 Day	1
	Drafting		Berry, Pierce	Nov. 16, 1/4 Day	1
	Electronics		Berry, Pierce	Nov. 16, 1/4 Day	1
	Machine Shop		Berry, Pierce	Nov. 16, 1/4 Day	1
	Printing		Berry, Pierce	Nov. 16, 1/4 Day	1
McAlester	Distributive Ed		DeBenning, Wilson	Nov. 14, P.M. 1/4 Day	1
	Home Economics		Wilson, DeBenning	Nov. 14, P.M. 1/4 Day	1
	Home Economics		Wilson, Ross	Nov. 15, A.M. 1/4 Day	1
Canadian	Agriculture		Brown, Reeder	Nov. 14, A.M. 1/2 Day	1
Quinton	Agriculture		Brown, Reeder	Nov. 14, P. M. 1/2 Day	1
Crowder	Agriculture		Brown, Reeder	Nov. 15, A.M. 1/4 Day	1
	Home Economics		Wilson, Ross	Nov. 15, A.M. 1/4 Day	1

County: Pittsburg

Number of Schools Evaluated in County -10

Number of Secondary Vocational Programs Evaluated in County

Agriculture	8	Distributive Education	1
Home Economics	10	Business & Office	2
Trade & Industrial	10	Cooperative Voc. Ed.	0
Technical	0	CVET	0
Health Occupations	1	Total	32

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Indianola	Agriculture	1	Brown, Reeder	Nov. 15, P.M. 1/2 Day	1
	Home Economics		Wilson, Ross	Nov. 15, P.M. 1/2 Day	1
Kiowa	Agriculture	1	Brown, Patton	Nov. 16, A.M. 1/2 Day	1
	Home Economics		Wilson, Ross	Nov. 16, A.M. 1/4 Day	1
	Carpentry		Wilson, Ross	Nov. 16, A.M. 1/4 Day	1
Savannah	Agriculture	1	Brown, Patton	Nov. 16, P.M. 1/2 Day	1
	Home Economics		Wilson, Ross	Nov. 16, P.M. 1/4 Day	1
	Auto Mechanics		Wilson, Ross	Nov. 16, P.M. 1/4 Day	1
Hartshorne	Agriculture (2)	1	Brown, Patton	Nov. 17, A.M. 1/4 Day	1
	Home Economics		Wilson, Ross	Nov. 17, A.M. 1/4 Day	1
	Home Economics		Wilson, Ross	Nov. 17, A.M. 1/4 Day	1
Haileyville	Agriculture	1	Brown, Patton	Nov. 17, P.M. 1/4 Day	1

PROGRAM EVALUATION SCHEDULE FOR

December 5-7, 1972

Schools	Team #	Evaluators	TU-5 am	TU-5 pm	W-6 am	W-6 pm	TH-7 am	TH-7 pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Guthrie	1	J. Jones	x	x	x	x	x				12 programs	John Jones
	1	H. Robinson	x	x	x							
Crescent	1	R. Moore	x	x							2 1/2 days	
	1	H. Jensen	x	x	x	x	x					
Marshall	1	J. Hefner	x	x								
	1	T. Best	x	x	x							
Coyle												

County: Logan

Number of Schools Evaluated in County -4

Number of Secondary Vocational Programs Evaluated in County

Agriculture	4	Distributive Education	1
Home Economics	2	Business & Office	1
Trade & Industrial	3	Cooperative Voc. Ed.	1
Technical	0	CVET	0
Health Occupations	0	Total	12

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Guthrie	Agriculture (3)	1	Jones, Robinson	Dec. 5, 1 Day	1
	Business & Office (COE)		Moore, Hefner	Dec. 5, A.M. 1/4 Day	1
	Distributive Ed.		Best, Jensen	Dec. 5, A.M. 1/2 Day	1
	Home Economics		Jensen, Best	Dec. 5, P. M. 1/2 Day	1
	Carpentry		Hefner, Moore	Dec. 5, A.M. 1/4 Day	1
	Electronics		Hefner, Moore	Dec. 5, P.M. 1/4 Day	1
	ICT		Hefner, Moore	Dec. 5, P.M. 1/4 Day	1
Crescent	Agriculture	1	Jones, Best	Dec. 6, A.M. 1/2 Day	1
	Home Economics		Jensen, Robinson	Dec. 6, A.M. 1/4 Day	1
	Cooperative Voc. Ed.		Robinson, Jensen	Dec. 6, A.M. 1/4 Day	1
Marshall	Agriculture	1	Jones, Jensen	Dec. 6, P.M. 1/2 Day	1
Coyle	Agriculture	1	Jones, Jensen	Dec. 7, A.M. 1/2 Day	1

PROGRAM EVALUATION SCHEDULE FOR

December 12-14, 1972

Schools	Team #	Evaluators	TU-12		W-13		TH-14		F-		Estimated Evaluation Time	Team Chairman
			am	pm	am	pm	am	pm	am	pm		
Antlers	2	J. Raunikar	x		x	x	x	x			9 programs	Martha Frizzell
	2	J. Herron	x	x								
Rattan	2	M. Frizzell	x	x	x	x	x	x			3 days	
	2	J. Thompson	x									
Clayton												

County: Pushmataha

Number of Schools Evaluated in County -3

Number of Secondary Vocational Programs Evaluated in County

Agriculture	3	Distributive Education	0
Home Economics	4	Business & Office	0
Trade & Industrial	0	Cooperative Voc. Ed.	0
Technical	0	CVET	2
Health Occupations	0	Total	9

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Antlers	Agriculture	2	Raunikar, Herron	Dec. 12, A.M. 1/4 Day	1
	CVET (T & I)		Herron, Raunikar	Dec. 12, A.M. 1/4 Day	1
	CVET (**H.E.)		Herron, Frizzell	Dec. 12, P.M. 1/2 Day	1
	Home Economics Jr.		Frizzell, Thompson	Dec. 12, A.M. 1/4 Day	1
	Home Economics Sr.		Frizzell, Thompson	Dec. 12, A.M. 1/4 Day	1
Rattan	Agriculture	2	Raunikar, Frizzell	Dec. 13, A.M. 1/2 Day	1
	Home Economics		Frizzell, Raunikar	Dec. 13, P.M. 1/2 Day	1
Clayton	Agriculture	2	Raunikar, Frizzell	Dec. 14, A.M. 1/2 Day	1
	Home Economics		Frizzell, Raunikar	Dec. 14, P.M. 1/2 Day	1

PROGRAM EVALUATION SCHEDULE FOR

December 19-21, 1972

Schools	Team #	Evaluators	TU-19 am	TU-19 pm	W-20 am	W-20 pm	TH-21 am	TH-21 pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Kingfisher	3	C. Collins	x	x	x	x	x	x			14 programs	Helen Jensen
	3	G. Isaacs	x	x	x							
Okarche	3	H. Jensen	x	x	x	x	x	x			3 days	
	3	R. Ayres	x	x	x							
Lomega (Omega)												
Hennessey												
Dover												
Cashion												

County: Kingfisher

Number of Schools Evaluated in County -6

Number of Secondary Vocational Programs Evaluated in County

Agriculture	7	Distributive Education	0
Home Economics	3	Business & Office	0
Trade & Industrial	4	Cooperative Voc. Ed.	0
Technical	0	CVET	0
Health Occupations	0	Total	14

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Kingfisher	Agriculture	3	Collins, Isaacs	Dec. 19, A.M. 1/2 Day	1
	Home Economics		Jensen, Ayres	Dec. 19, A.M. 1/4 Day	1
	Home Economics		Jensen, Ayres	Dec. 19, A.M. 1/4 Day	1
	Auto Mechanics		Ayres, Jensen	Dec. 19, P.M. 1/4 Day	1
	Carpentry		Ayres, Jensen	Dec. 19, P.M. 1/4 Day	1
	Cosmetology		Ayres, Jensen	Dec. 20, A.M. 1/4 Day	1
	Drafting		Ayres, Jensen	Dec. 20, A.M. 1/4 Day	1
Okarche	Agriculture	3	Collins, Isaacs	Dec. 19, P.M. 1/2 Day	1
Lomega (Omega)	Agriculture	3	Collins, Isaacs	Dec. 20, A.M. 1/2 Day	1
Hennessey	Agriculture	3	Collins, Jensen	Dec. 20, P.M. 1/4 Day	1
	Home Economics		Jensen, Collins	Dec. 20, P.M. 1/4 Day	1
Dover	Agriculture	3	Collins, Jensen	Dec. 21, A.M. 1/4 Day	1
	Home Economics		Jensen, Collins	Dec. 21, A.M. 1/4 Day	1
Cashion	Agriculture	3	Collins, Jensen	Dec. 21, P.M. 1/2 Day	1

PROGRAM EVALUATION SCHEDULE FOR

January 9-10, 1973

Schools	Team #	Evaluators	TU-9 am	TU-9 pm	W-10 am	W-10 pm	TH- am	TH- pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Ponca City	1	V. Hart	x	x	x	x					14 programs	Verlin Hart
	1	J. Thompson	x	x	x	x						
Tonkawa	1	D. Butler	x	x	x	x					2 days	
Newkirk	1	T. Best	x	x	x	x						
Blackwell												

County: Kay

Number of Schools Evaluated in County -4

Number of Secondary Vocational Programs Evaluated in County

Agriculture	4	Distributive Education	3
Home Economics	3	Business & Office	0
Trade & Industrial	4	Cooperative Voc. Ed.	0
Technical	0	CVET	0
Health Occupations	0	Total	14

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Ponca City	Agriculture	1	Hart, Thompson	Jan. 9, A.M. 1/2 Day	1
	Distributive Education		Best, Butler	Jan. 9, A.M. 1/4 Day	1
	Distributive Education		Best, Butler	Jan. 9, A.M. 1/4 Day	1
	Auto Mechanics	1	Best, Butler	Jan. 9, P.M. 1/4 Day	1
	Cabinetmaking		Best, Butler	Jan. 9, P.M. 1/4 Day	1
	Machine Shop		Best, Butler	Jan. 10, A.M. 1/4 Day	1
	Printing		Best, Butler	Jan. 10, A.M. 1/4 Day	1
Tonkawa	Agriculture	1	Hart, Thompson	Jan. 9, P.M. 1/4 Day	1
	Home Economics		Thompson, Hart	Jan. 9, P.M. 1/4 Day	1
Newkirk	Agriculture	1	Hart, Thompson	Jan. 10, A.M. 1/4 Day	1
	Home Economics		Thompson, Hart	Jan. 10, A.M. 1/4 Day	1
Blackwell	Agriculture		Hart, Thompson	Jan. 10, P.M. 1/4 Day	1
	Distributive Education		Best, Butler	Jan. 10, P.M. 1/2 Day	1
	Home Economics		Thompson, Hart	Jan. 10, P.M. 1/4 Day	1

PROGRAM EVALUATION SCHEDULE FOR

January 16-18, 1973

Schools	Team #	Evaluators	TU-16 am	TU-16 pm	W-17 am	W-17 pm	TH-18 am	TH-18 pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Vinita	2	J. Raunikar	x	x	x	x	x	x			11 programs	Joe Raunikar
	2	J. Thompson	x	x	x	x	x	x				
Big Cabin	2	R. Meritt	x	x							3 days	
	2	T. Best	x	x								
Ketchum												
Bluejacket												
Welch												

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County: Craig

Number of Schools Evaluated in County 5

Number of Secondary Vocational Programs Evaluated in County

Agriculture	3	Distributive Education	1
Home Economics	6	Business & Office	0
Trade & Industrial	1	Cooperative Voc. Ed.	0
Technical	0	CVET	0
Health Occupations	0	Total	11

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Vinita	Agriculture	2	Raunikar, Meritt	Jan. 16, A.M. 1/2 Day	1
	Distributive Education		Best, Thompson	Jan. 16, 1/3 Day	1
	Home Economics		Thompson, Best	Jan. 16, 1/3 Day	1
	Home Economics		Thompson, Best	Jan. 16, 1/3 Day	1
	Auto Mechanics		Meritt, Raunikar	Jan. 16, P.M. 1/2 Day	1
Big Cabin	Home Economics	2	Thompson, Raunikar	Jan. 17, A.M. 1/2 Day	1
Ketchum	Home Economics	2	Thompson, Raunikar	Jan. 17, P.M. 1/2 Day	1
Bluejacket	Agriculture	2	Raunikar, Thompson	Jan. 18, A.M. 1/4 Day	1
	Home Economics		Thompson, Raunikar	Jan. 18, A.M. 1/4 Day	1
Welch	Agriculture	2	Raunikar, Thompson	Jan. 18, P.M. 1/4 Day	1
	Home Economics		Thompson, Raunikar	Jan. 18, P.M. 1/4 Day	1

PROGRAM EVALUATION SCHEDULE FOR

January 23-25, 1973

Schools	Team #	Evaluators	TU-23 am	TU-23 pm	W-24 am	W-24 pm	TH-25 am	TH-25 pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Holdenville	3	C. Collins	x	x	x	x	x	x			17 programs	Victor Van Hook
	3	V. Van Hook	x	x								
Moss (Holdenville)	3	M. Frizzell	x	x	x	x	x	x			3 days	
	3	H. Robinson	x	x								
Wetumka	3	J. Hefner	x	x								
	3	Teacher Educator	x	x								
Dustin												
Calvin												
Stuart												

Note: One person serving on sub-teams (two-man teams) will assume the role of Team Chairman when visiting the administration.

ED 090

County: Hughes

Number of Schools Evaluated in County -6

Number of Secondary Vocational Programs Evaluated in County

Agriculture	6	Distributive Education	0
Home Economics	6	Business & Office	1
Trade & Industrial	3	Cooperative Voc. Ed.	1
Technical	0	CVET	0
Health Occupations	0	Total	17

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Holdenville	Agriculture	3	Collins, Teacher Ed.	Jan. 23, A.M. 1/2 Day	1
	Businesss & Office (COE)		Van Hook, Hefner	Jan. 23, A.M. 1/4 Day	1
	Cooperative Voc. Ed.		Robinson, Frizzell	Jan. 23, A.M. 1/2 Day	1
	Home Economics		Frizzell, Robinson	Jan. 23, P.M. 1/4 Day	1
	Home Economics		Frizzell, Robinson	Jan. 23, P.M. 1/4 Day	1
	Auto Mechanics		Hefner, Van Hook	Jan. 23, A.M. 1/4 Day	1
	Drafting		Hefner, Van Hook	Jan. 23, P.M. 1/4 Day	1
	ICT		Hefner, Van Hook	Jan. 23, P.M. 1/4 Day	1
Moss (Holdenville)	Agriculture	3	Collins, Teacher Ed.	Jan. 23, P.M. 1/2 Day	1
Wetumka	Agriculture	3	Collins, Frizzell	Jan. 24, A.M. 1/4 Day	1
	Home Economics		Frizzell, Collins	Jan. 24, A.M. 1/4 Day	1
Dustin	Agriculture	3	Collins, Frizzell	Jan. 24, P.M. 1/4 Day	1
	Home Economics		Frizzell, Collins	Jan. 24, P.M. 1/4 Day	1
Calvin	Agriculture	3	Collins, Frizzell	Jan. 25, A.M. 1/4 Day	1
	Home Economics		Frizzell, Collins	Jan. 25, A.M. 1/4 Day	1
Stuart	Agriculture	3	Collins, Frizzell	Jan. 25, P.M. 1/4 Day	1
	Home Economics		Frizzell, Collins	Jan. 25, P.M. 1/4 Day	1

PROGRAM EVALUATION SCHEDULE FOR

February 6-8, 1973

Schools	Team #	Evaluators	TU-6 am	TU-6 pm	W-7 am	W-7 pm	TH-8 am	TH-8 pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Tishomingo	1	B. Thomason	x	x	x						3 programs	Benton Thomason
Wapanucka	1	W. Wilson	x	x	x						1 1/2 days	
Terral	2	J. Jones	x	x	x	x	x				7 programs	Martha Frizzell
Ryan	2	M. Frizzell	x	x	x	x		x				
Waurika	2	C. Haraughty					x	x			3 days	
Ringling												

County: Johnston

Number of Schools Evaluated in County -2

Number of Secondary Vocational Programs Evaluated in County

Agriculture	2	Distributive Education	0
Home Economics	1	Business & Office	0
Trade & Industrial	0	Cooperative Voc. Ed.	0
Technical	0	CVET	0
Health Occupations	0	Total	3

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Tishomingo	Agriculture (2)	1	Thomason, Wilson	Feb. 6, A.M. 1/2 Day	1
	Home Economics		Wilson, Thomason	Feb. 6, P.M. 1/2 Day	1
Wapanucka	Agriculture	1	Thomason, Wilson	Feb. 7, A.M. 1/2 Day	1

County: Jefferson

Number of Schools Evaluated in County -4

Number of Secondary Vocational Programs Evaluated in County

Agriculture	4	Distributive Education	0
Home Economics	2	Business & Office	0
Trade & Industrial	1	Cooperative Voc. Ed.	0
Technical	0	CVET	0
Health Occupations	0	Total	7

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Terral	Agriculture	2	Jones, Frizzell	Feb. 6, A.M. 1/2 Day	1
Ryan	Agriculture	2	Jones, Frizzell	Feb. 6, P.M. 1/2 Day	1
Waurika	Agriculture	2	Jones, Frizzell	Feb. 7, A.M. 1/2 Day	1
	Home Economics		Frizzell, Jones	Feb. 7, P.M. 1/2 Day	1
Ringling	Agriculture	2	Jones, Haraughty	Feb. 8, A.M. 1/4 Day	1
	Home Economics		Frizzell, Haraughty	Feb. 8, P.M. 1/2 Day	1
	Carpentry		Haraughty, Jones	Feb. 8, A.M. 1/4 Day	1

PROGRAM EVALUATION SCHEDULE FOR

February 13-15, 1973

Schools	Team #	Evaluators	TU-13 am	TU-13 pm	W-14 am	W-14 pm	TH-15 am	TH-15 pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Stigler	3	J. Thompson	x	x	x	x	x				7 programs	Joyce Thompson
	3	B. Brown	x	x	x	x	x					
Keota	3	C. Haraughty	x	x							2 1/2 days	
	3	W. Penner	x	x								
Kinta												
Wilburton	4	V. Hart	x	x	x	x	x	x			9 programs	Verlin Hart
	4	W. Wilson	x	x	x	x	x					
Panola	4	C. Haraughty						x			3 days	
Buffalo Valley (Talihina)												
Red Oak												

County: Haskell

Number of Schools Evaluated in County -3

Number of Secondary Vocational Programs Evaluated in County

Agriculture	3	Distributive Education	0
Home Economics	2	Business & Office	0
Trade & Industrial	2	Cooperative Voc. Ed.	0
Technical	0	CVET	0
Health Occupations	0	Total	7

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Stigler	Agriculture	3	Brown, Thompson	Feb. 13, A.M. 1/2 Day	1
	Home Economics		Thompson, Brown	Feb. 13, P.M. 1/2 Day	1
	Auto Mechanics		Haraughty, Penner	Feb. 13, A.M. 1/2 Day	1
	Welding		Haraughty, Penner	Feb. 13, P.M. 1/2 Day	1
Keota	Agriculture (2)	3	Brown, Thompson	Feb. 14, A.M. 1/2 Day	1
	Home Economics		Thompson, Brown	Feb. 14, P.M. 1/2 Day	1
Kinta	Agriculture	3	Brown, Thompson	Feb. 15, A.M. 1/2 Day	1

County: Latimer

Number of Schools Evaluated in County -4

Number of Secondary Vocational Programs Evaluated in County

Agriculture	4	Distributive Education	0
Home Economics	4	Business & Office	0
Trade & Industrial	1	Cooperative Voc. Ed.	0
Technical	0	CVET	0
Health Occupations	0	Total	9

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Wilburton	Agriculture	4	Hart, Wilson	Feb. 13, A.M. 1/4 Day	1
	Home Economics		Wilson, Hart	Feb. 13, A.M. 1/4 Day	1
Panola	Agriculture	4	Hart, Wilson	Feb. 13, P.M. 1/4 Day	1
	Home Economics		Wilson, Hart	Feb. 13, P.M. 1/4 Day	1
Buffalo Valley (Talihina)	Agriculture	4	Hart, Wilson	Feb. 14, A.M. 1/2 Day	1
	Home Economics		Wilson, Hart	Feb. 14, P.M. 1/2 Day	1
Red Oak	Agriculture	4	Hart, Wilson	Feb. 15, A.M. 1/4 Day	1
	Home Economics		Wilson, Hart	Feb. 15, A.M. 1/4 Day	1
	Auto Mechanics		Haraughty, Hart	Feb. 15, P.M. 1/2 Day	1

PROGRAM EVALUATION SCHEDULE FOR

February 20-21, 1973

Schools	Team #	Evaluators	TU-20 am	TU-20 pm	W-21 am	W-21 pm	TH- am	TH- pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Laverne	5	B. Thomason	x	x	x	x					5 programs	Helen Jensen
	5	H. Jensen	x	x		x						
Buffalo	5	R. Meritt			x						2 days	

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County: Harper

Number of Schools Evaluated in County 2

Number of Secondary Vocational Programs Evaluated in County

Agriculture	2	Distributive Education	0
Home Economics	2	Business & Office	0
Trade & Industrial	1	Cooperative Voc. Ed.	0
Technical	0	CVET	0
Health Occupations	0	Total	5

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Laverne	Agriculture	5	Thomason, Jensen	Feb. 20, A.M 1/2 Day	1
	Home Economics		Jensen, Thomason	Feb. 20, P.M. 1/2 Day	1
Buffalo	Agriculture	5	Thomason, Meritt	Feb. 21, A.M. 1/4 Day	1
	Home Economics		Jensen, Thomason	Feb. 21, P.M. 1/2 Day	1
	ICT		Meritt, Thomason	Feb. 21, A.M. 1/4 Day	1

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PROGRAM EVALUATION SCHEDULE FOR

March 27-29, 1973

Schools	Team #	Evaluators	TU-27 am	TU-27 pm	W-28 am	W-28 pm	TH-29 am	TH-29 pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Indian Capitol AVTS	1	D. Pierce	x	x	x	x	x				41 programs	Cleo Collins
	1	H. Robinson	x	x	x	x	x	x				
Haskell	1	M. Pittman	x	x	x	x					3 days	
	1	J. Thompson	x	x	x	x	x	x				
Taft Moton	1	C. Collins	x	x	x	x	x	x				
	1	J. Raunikar				x	x	x				
Webbers Falls	1	N. Johnson	x	x	x	x	x	x				
	1	R. Meritt	x	x	x	x	x					
Warner	1	D. Butler	x	x	x	x	x	x				
	1	B. Patton	x	x	x	x						
Boynton	1	M. J. DeBenning	x	x	x	x	x	x				
	1	Teacher Educator				x	x	x				
Oktaha												
Fort Gibson												
Oklahoma School for the Blind												
Muskogee												

Note: One person serving on sub-teams (two-man teams) will assume the role of Team Chairman when visiting the administration.

County: Muskogee

Number of Schools Evaluated in County 10

Number of Secondary Vocational Programs Evaluated in County

Agriculture	8	Distributive Education	3
Home Economics	9	Business & Office	3
Trade & Industrial	16	Cooperative Voc. Ed.	1
Technical	0	CVET	0
Health Occupations	1	Total	41

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Indian Capital AVTS Muskogee	Business & Office (Gen. Clerical)	1	Pierce, Robinson	March 27, A.M. 1/4 Day	1
	Business & Office (Gen. Clerical)		Pierce, Thompson	March 27, A.M. 1/4 Day	1
	Health Ser. Occ.		Pittman, Robinson	March 27, A.M. 1/4 Day	1
	Air Con. & Refrigeration		Meritt, Johnson	March 27, A.M. 1/4 Day	1
	Aircraft Mechanics		Meritt, Pittman	March 27, A.M. 1/4 Day	1
	Auto Body		Meritt, Pittman	March 27, P.M. 1/4 Day	1
	Machine Shop		Butler, Patton	March 27, A.M. 1/2 Day	1
Haskell	Agriculture	1	Collins, DeBenning	March 27, A.M. 1/2 Day	1
Taft Moton	Agriculture	1	Collins, Patton	March 27, P.M. 1/2 Day	1
	Business & Office (Gen. Clerical)		Pierce, Thompson	March 27, P.M. 1/4 Day	1
	Cooperative Voc. Ed.		Robinson, Butler	March 27, P.M. 1/4 Day	1
	Distributive Education		DeBenning, Pittman	March 28, P.M. 1/2 Day	1
	Home Economics		Thompson, Pierce	March 27, P.M. 1/8 Day	1
	**Home Economics		Thompson, Pierce	March 27, P.M. 1/8 Day	1
	ICT		Butler, Robinson	March 27, P.M. 1/4 Day	1
Webbers Falls	Agriculture	1	Collins, Thompson	March 29, A.M. 1/2 Day	1
Warner	Agriculture	1	Collins, Thompson	March 29, P.M. 1/4 Day	1
	Home Economics		Thompson, Collins	March 29, P.M. 1/4 Day	1

County: Muskogee

Number of Schools Evaluated in County 10

Number of Secondary Vocational Programs Evaluated in County

Agriculture	8	Distributive Education	3
Home Economics	9	Business & Office	3
Trade & Industrial	16	Cooperative Voc. Ed.	1
Technical	0	CVET	0
Health Occupations	1	Total	41

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Boynton	Agriculture	1	Collins, Patton	March 28, A.M. 1/2 Day	1
Indian Capital AVTS Muskogee	Auto Mechanics	1	Butler, Pierce	March 28, A.M. 1/4 Day	1
	Brick Masonry		Butler, Pierce	March 28, A.M. 1/4 Day	1
	Carpentry		Meritt, Robinson	March 28, A.M. 1/4 Day	1
	Drafting		Meritt, Robinson	March 28, A.M. 1/4 Day	1
	Electricity		Butler, Pierce	March 28, P.M. 1/2 Day	1
	Welding		Meritt, Robinson	March 28, P.M. 1/2 Day	1
Fort Gibson	Agriculture	1	Raunikar, Teacher Ed.	March 28, P.M. 1/2 Day	1
	Home Economics		Thompson, Pittman	March 28, A.M. 1/2 Day	1
Oklahoma School for the Blind (Muskogee)	Distributive Education (2)	1	DeBenning, Johnson	March 27, P.M. 1/2 Day	1
	**Home Economics		Johnson, DeBenning	March 28, A.M. 1/2 Day	1
Muskogee	Agriculture (2)	1	Raunikar, Teacher Ed.	March 29, 1 Day	1
	Distributive Education		DeBenning, Johnson	March 29, A.M. 1/4 Day	1
	Home Economics		Johnson, DeBenning	March 29, A.M. 1/4 Day	1
	Home Economics		Johnson, DeBenning	March 29, P.M. 1/4 Day	1
	Home Economics		Johnson, DeBenning	March 29, P.M. 1/4 Day	1
	Home Economics		Thompson, Johnson	March 28, P.M. 1/2 Day	1
	Auto Mechanics		Butler, Robinson	March 29, A.M. 1/4 Day	1
	Auto Mechanics		Butler, Robinson	March 29, A.M. 1/4 Day	1

County: Muskogee

Number of Schools Evaluated in County 10

Number of Secondary Vocational Programs Evaluated in County

Agriculture	8	Distributive Education	3
Home Economics	9	Business & Office	3
Trade & Industrial	16	Cooperative Voc. Ed.	1
Technical	0	CVET	0
Health Occupations	1	Total	41

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Muskogee (continued)	Cabinetmaking	1	Meritt, Pierce	March 29, A.M. 1/4 Day	1
	Cosmetology		Meritt, Pierce	March 29, A.M. 1/4 Day	1
	Printing		Butler, Robinson	March 29, P.M. 1/2 Day	1
Oktaha	Agriculture	1	Collins, Patton	March 28, P.M. 1/2 Day	1

PROGRAM EVALUATION SCHEDULE FOR

April 10-11, 1973

Schools	Team #	Evaluators	TU-10 am	TU-10 pm	W-11 am	W-11 pm	TH- am	TH- pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Classen	1	R. Moore	x	x							12 Programs	Rex Moore
	1	H. Robinson	x	x							2 Days	
John Marshall	1	R. Dreessen			x							
	1	N. Johnson			x							
	1	D. Butler	x	x	x	x						
	1	J. Weatherford			x	x						
	1	Teacher Educator	x	x								
U.S. Grant	2	V. Van Hook	x	x	x						10 Programs	Jack Hefner
	2	T. Best	x	x	x						2 Days	
	2	J. Hefner	x	x	x	x						
	2	Teacher Ed.	x	x	x	x						

County: Oklahoma

Number of Schools Evaluated in County 4

Number of Secondary Vocational Programs Evaluated in County

Agriculture	1	Distributive Education	4
Home Economics	2	Business & Office	5
Trade & Industrial	19	Cooperative Voc. Ed.	1
Technical	0	CVET	0
Health Occupations	0	Total	32

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Classen	Business & Office (COE)	1	Moore, Robinson	April 10, A.M. 1/2 Day	1
	Cooperative Voc. Ed. (2)		Robinson, Moore	April 10, P.M. 1/2 Day	1
	Auto Mechanics		Butler, Teacher Ed.	April 10, A.M. 1/4 Day	1
	Electronics		Butler, Teacher Ed.	April 10, A.M. 1/4 Day	1
	Upholstery		Butler, Teacher Ed.	April 10, P.M. 1/2 Day	1
John Marshall	Agriculture	1	Dreessen, Teacher Ed.	April 11, A.M. 1/2 Day	1
	Business & Office (COE)		Moore, Butler	April 11, A.M. 1/4 Day	1
	Distributive Education		Weatherford, Johnson	April 11, A.M. 1/4 Day	1
	**Home Economics		Johnson, Weatherford	April 11, A.M. 1/4 Day	1
	Auto Mechanics		Butler, Moore	April 11, A.M. 1/4 Day	1
	Cosmetology		Butler, Weatherford	April 11, P.M. 1/4 Day	1
	Electronics		Butler, Weatherford	April 11, P.M. 1/4 Day	1
U. S. Grant	Business & Office (COE)	2	Van Hook, Best	April 10, P.M. 1/2 Day	1
	Business & Office (COE)		Van Hook, Best	April 11, A.M. 1/2 Day	1
	Distributive Education		Best, Van Hook	April 10, A.M. 1/4 Day	1
	Distributive Education (CVE)		Best, Van Hook	April 10, A.M. 1/4 Day	1
	Auto Body		Hefner, Teacher Ed.	April 10, 1/3 Day	1
	Auto Mechanics		Hefner, Teacher Ed.	April 10, 1/3 Day	1
	Cosmetology		Hefner, Teacher Ed.	April 10, 1/3 Day	1
	Drafting		Hefner, Teacher Ed.	April 11, 1/3 Day	1
	Electricity		Hefner, Teacher Ed.	April 11, 1/3 Day	1
	Sheet Metal		Hefner, Teacher Ed.	April 11, 1/3 Day	1

PROGRAM EVALUATION SCHEDULE FOR

April 17-18, 1973

Schools	Team #	Evaluators	TU-17 am	TU-17 pm	W-18 am	W-18 pm	TH- am	TH- pm	F- am	F- pm	Estimated Evaluation Time	Team Chairman
Douglass	3	D. Pierce	x	x							11 Programs	Roy Ayres
	3	N. Johnson	x	x								
	3	L. Catherwood			x	x					2 Days	
	3	J. Weatherford	x	x								
	3	R. Ayres	x	x	x	x						

County: Oklahoma

Number of Schools Evaluated in County -4

Number of Secondary Vocational Programs Evaluated in County

Agriculture	1	Distributive Education	4
Home Economics	2	Business & Office	5
Trade & Industrial	19	Cooperative Voc. Ed.	1
Technical	0	CVET	0
Health Occupations	0	Total	32

School District	Program	Eval. Team	Evaluators	Date	No. Programs to Evaluate
Douglass	Business & Office (COE)	3	Pierce, Weatherford	April 17, A.M. 1/4 Day	1
	Distributive Education (CVE)		Weatherford, Pierce	April 17, A.M. 1/4 Day	1
	**Home Economics (CVE)		Johnson, Pierce	April 17, P.M. 1/2 Day	1
	Auto Body		Ayres, Johnson	April 17, A.M. 1/4 Day	1
	Auto Mechanics		Ayres, Johnson	April 17, A.M. 1/4 Day	1
	Brick Masonry		Ayres, Catherwood	April 18, A.M. 1/4 Day	1
	Cosmetology		Ayres, Catherwood	April 18, A.M. 1/4 Day	1
	Electronics		Ayres, Catherwood	April 18, P.M. 1/4 Day	1
	Tailoring		Ayres, Catherwood	April 18, P.M. 1/4 Day	1
	Upholstery		Ayres, Weatherford	April 17, P.M. 1/4 Day	1
	Welding		Ayres, Weatherford	April 17, P.M. 1/4 Day	1

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VT 017 534
FLORIDA STATE ADVISORY COUNCIL ON VOCATIONAL AND TECHNICAL EDUCATION ANNUAL REPORT, 1971.

FLORIDA STATE ADVISORY COUNCIL ON VOCATIONAL AND TECHNICAL EDUCATION.
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DESCRIPTORS - *ANNUAL REPORTS; *ADVISORY COMMITTEES; *VOCATIONAL EDUCATION; *TECHNICAL EDUCATION
IDENTIFIERS - *FLORIDA

ABSTRACT - THE ACTIVITIES AND PROCEEDINGS OF THE FLORIDA ADVISORY COUNCIL ON VOCATIONAL EDUCATION FOR THE 1970-71 YEAR ARE SUMMARIZED IN THIS REPORT. PRESENTED ARE: (1) COUNCIL RECOMMENDATIONS REGARDING EVALUATION, (2) A SUMMARY OF MAJOR COUNCIL ACTIVITIES, (3) SUMMARIES OF EVALUATION RESEARCH STUDIES OF SPECIFIC COMPONENTS OF THE FLORIDA VOCATIONAL EDUCATION PROGRAM, (4) A SYNOPSIS OF STATE PLAN GOAL ACCOMPLISHMENTS, AND (5) A SUMMARY OF THE CONTENTS OF PUBLIC MEETINGS. (SN)

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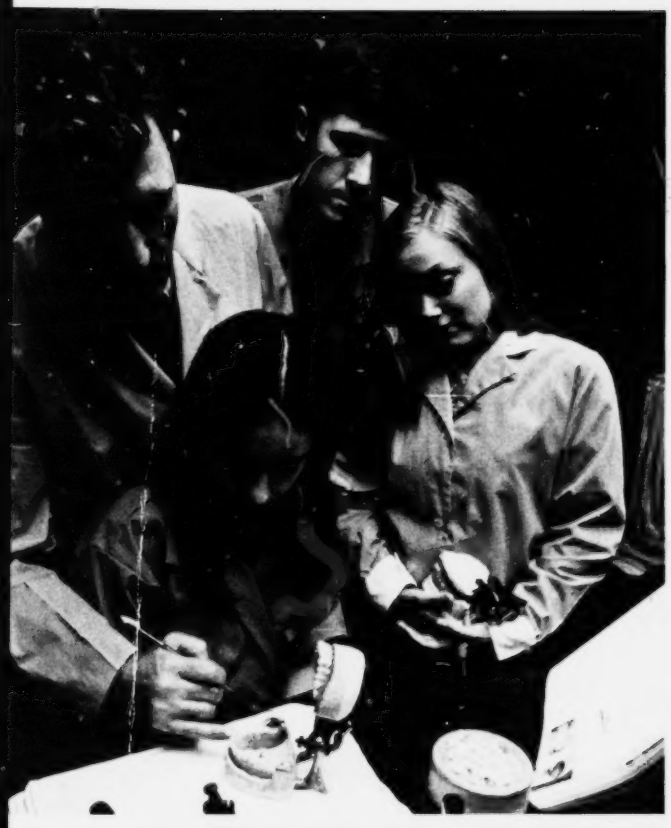
SEPTEMBER, 1971

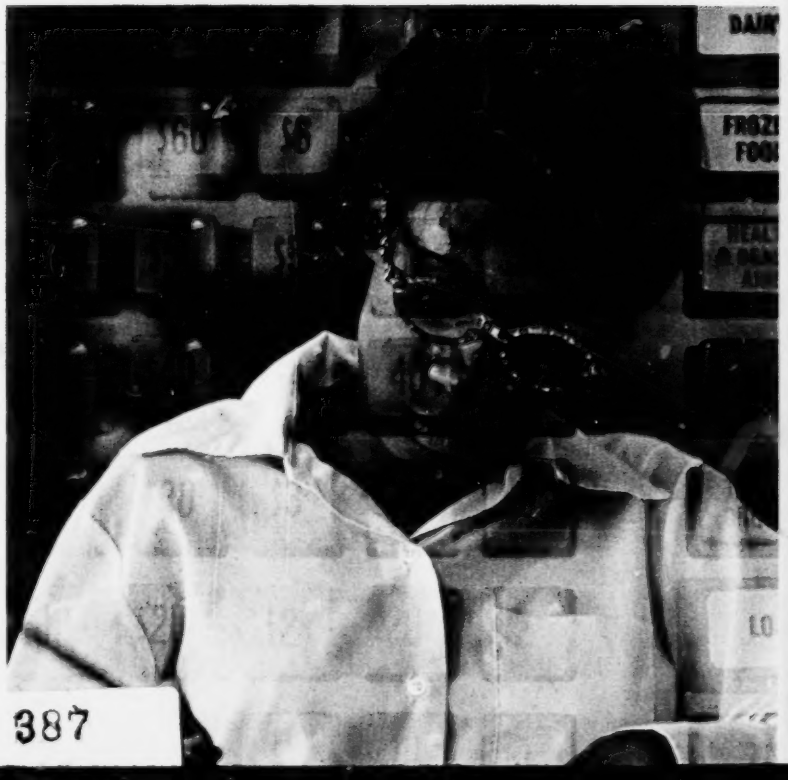


Florida State Advisory Council

on vocational and technical education

DEPARTMENT OF EDUCATION
TALLAHASSEE, FLORIDA

FLOYD T. CHRISTIAN
COMMISSIONER



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FLORIDA STATE ADVISORY COUNCIL
ON
VOCATIONAL AND TECHNICAL EDUCATION

FLORIDA STATE ADVISORY COUNCIL

on

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MR. BOISY N. WAITERS, SR.
DANIA

September 1971

The Honorable Reubin O'D. Askew
Governor of Florida and
Members of the State Board for
Vocational Education
The Capitol
Tallahassee, Florida

Gentlemen:

The Florida State Advisory Council on Vocational and Technical Education submits to you its Second Annual Evaluation Report of Vocational-Technical Education in Florida for your consideration and transmittal to the U. S. Commissioner of Education and the National Advisory Council on Vocational Education.

Public Law 90-576, also known as the Vocational Education Amendments of 1968, requires that councils "prepare and submit through the State board to the Commissioner and to the National Advisory Council an annual evaluation report, accompanied by such additional comments of the State board as the State board deems appropriate, ..."

The Council hopes that this report will be given serious consideration by you in planning and making quality career education available to all Floridians. The Council would appreciate receiving from appropriate State Board staff a response to this report which indicates any action taken or proposed pertaining to the recommendations and suggestions as to how Council activities and reports could become more relevant.

Sincerely,

James L. Ghiotto

James L. Ghiotto
Chairman

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James L. Ghiotto
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PREFACE

This Second Annual Evaluation Report of the Florida State Advisory Council on Vocational and Technical Education is based upon evaluation activities of the Council during fiscal year 1971. The report has been developed by the Council and its staff, and recommendations reflect the Council's thinking as related to specific components of the Florida program of vocational-technical education. Some specific sources of information utilized are summarized in the appendix.

The Florida State Advisory Council on Vocational and Technical Education was established by the State Board for Vocational Education for purposes of Section 104 (b) of the Vocational Act of 1963, as amended by the Vocational Education Amendments of 1968 (Public Law 90-576).

The Council is a citizens' advisory group appointed by the State Board with representation from management, labor, education, and the general public.

Major responsibilities of the Council are:

1. To advise the State Board on the development of the *Florida State Plan for the Administration of Vocational Education* and on policy matters relating to State Plan administration,

2. To evaluate vocational education programs, services and activities and publish and distribute the results thereof,

3. To prepare and submit an annual evaluation report to the State Board, the U. S. Commissioner of Education, and the National Advisory Council on Vocational Education, and

4. To conduct at least one meeting each year to give the public an opportunity to express views concerning vocational education.

The Council appreciates the help that many persons gave the Council, its staff, and the Florida State University research group that conducted specific studies in selected community-junior colleges, area vocational-technical centers and high schools.

A special debt of gratitude is due Dr. Carl W. Proehl, Director, Division of Vocational, Technical and Adult Education; Dr. Lee G. Henderson, Director, Division of Community Colleges; Mr. Shelley S. Boone, Director, Division of Elementary and Secondary Education; and the staff serving in these divisions.

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INTRODUCTION

This report is directed to the Florida State Board for Vocational Education, the Florida Department of Education and its respective Divisions, the Florida Legislature, educational institutions, the general public, the United States Commissioner of Education, and the National Advisory Council on Vocational Education. Although some of the recommendations concern operation of programs by the State's educational institutions and the Department of Commerce, the Council anticipates that leadership will be provided by State Board staff to coordinate and implement the recommendations deemed to be appropriate and timely by the Board.

The Council has found that the total program of vocational-technical education has grown at a rapid rate in terms of the quality of programs and the number of persons served. This is reflected in Appendix C–"Summary of State Goal Accomplishments." This growth and improvement in quality of occupational programs is due in large measure to the support of the Florida Legislature, the people of Florida, and the professional leadership at the State and institutional levels. The Council extends a special commendation to Dr. Carl W. Proehl, Director, Division of Vocational, Technical and Adult Education, for his dedication and vigorous leadership in developing and administering the State's occupational education program.

It should be pointed out, however, that there are still many unmet needs for vocational education. By conservative estimate, at least 30 percent more high school students need to develop occupational skills, adults need to learn new skills and update old skills, additional disadvantaged and minority groups persons need training, and funds are needed to implement the comprehensive package of vocational legislation that was enacted in 1970 and 1971 by the Florida Legislature.

The following recommendations are based on information from a variety of sources. Many are based on evaluation studies done under contract for the Council by the Department of Educational Administration, Florida State University. Other sources of information were public hearings conducted by the Council, information received directly from selected counties, and data compiled by the Division of Vocational, Technical and Adult Education.

The U. S. Office of Education, Division of Vocational-Technical Education, the National Advisory Council and an ad hoc committee representing state advisory councils developed and recommended the use of the three broad goals for council evaluation that are utilized. The Florida Council selected and evaluated specific areas under each of the three evaluation goals. Additional information pertaining to the recommendations may be found in the appendices.

COUNCIL RECOMMENDATIONS

Goal I: *Evaluation should focus on the state's goals and priorities as set forth in the state plan.*

A. The Council submits the following recommendations pertaining to vocational guidance. (Appendix B-1, B-3)

1. That work experience programs for counselors be implemented in conjunction with the staff development and in-service programs so that counselors may relate better to on-the-job activities.

2. That more reliable information regarding labor market supply and demand be used in vocational guidance.

3. That occupational orientation courses be offered in the elementary and secondary schools.

4. That adequate funds be made available so that comprehensive vocational guidance programs can become operational.

Vocational guidance in Florida remains primarily unchanged from last year. This is not to condemn all that is being done however. A review of plans under development, pilot programs, legislation, and the work of many individuals indicates that progress is being made.

Plans have been made to reduce the counselor-pupil ratio, utilize para-professionals, develop better training programs, and supply vocational guidance information. Progress is dependent upon a united effort to make the program effective.

B. The Council submits the following recommendations relating to cost-benefit analysis of vocational-technical programs.(Appendix B-2)

1. That development of program budget and cost accounting systems be continued and at the earliest possible date fully implemented on a state-wide basis. The system must become operational before accurate cost-benefit studies can be conducted.

2. That a cost-effectiveness analysis of vocational-technical programs be performed at the secondary and post-secondary levels. One objective should be to contrast the economic efficiency of programs by level.

3. That cost-benefit ratios in social and private rates of return of vocational-technical education programs be coupled with subjective evaluations to serve as input data for decision making.

4. That the findings of the "Cost-Benefit Analysis of Occupational Training Programs" be provided guidance counselors in Florida's educational institutions.

   The findings of this study can become valuable counseling tools by providing prospective students advance information about the relative monetary value of various vocational-technical education programs.

Progress has occurred during the 1970-71 school year in the development of program budget and cost accounting systems by State level administrators. The Division of Community Colleges and the Division of Vocational, Technical and Adult Education have completed a model for cost analysis and it is being experimentally implemented. The Division of Vocational, Technical and Adult Education is participating in a national cost accounting project that will develop cost analyses of vocational-technical education in three counties and one community-junior college. The Bureau of Finance of the Department of Education is developing a program-oriented budget and accounting system that is to be experimentally parallel to existing accounting systems in selected districts during 1971-72.

C. The Council recommends that community-junior colleges, area vocational-technical centers, and comprehensive high schools provide placement and follow-up services for students enrolled in occupational programs.
(Appendix B-1, B-3 a-c, D)

The majority of placements from vocational-technical education programs are made through teacher referrals, and many are made independently by the student themselves. Central placement offices should

not eliminate current instructor efforts but, instead, should supplement them. Additionally, they can provide a broader geographic contact that should minimize the impact of local employment demands by graduates. Institutionally, placement and follow-up services should: provide instructors and counselors with current labor market information, serve to establish and maintain communications with business and industry, and provide for more objective and systematic evaluation of training programs. "Few expenditures . . . will bring a bigger return in linking education with productivity, and in making schools effective in preparing young people for meaningful careers." [1]

D. The Council recommends that special emphasis be directed toward establishing and implementing a comprehensive vocational-technical education program in each school and community-junior college district in the State, applying such funds and efforts as may uniquely be necessary in each district to accomplish comprehensiveness.
(Appendix B)

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[1] Third Report, 1970, National Advisory Council on Vocational Education

Goal II: *Evaluation should focus upon the effectiveness with which people and their needs are served.*

A. The Council submits the following recommendations pertaining to community-junior college vocational-technical programs for the disadvantaged. (Appendix B-3a)

1. Community-junior colleges should define their role in serving disadvantaged persons.

   Of the ten colleges studied, one had a clear picture of its role in serving the disadvantaged that was easily and consistently vocalized by various members of the staff. At five other colleges the interviewer was able to obtain a statement that had reasonable consistency. At the remaining four, the role could not be vocalized by the persons interviewed.

2. Community-junior colleges should include representation from among disadvantaged groups to assist in recruiting disadvantaged persons into programs specifically developed to meet their needs.

   What is needed are persons who can effectively communicate with the target group. Hiring of Black or Cuban or Indian or Chicano, as the case may be, for recruiting purposes can be effective if the person chosen does not too closely fit the institution's mold. On the other hand, care must be taken to select someone who will not alienate the faculty.

3. Community-junior colleges should expand the utilization of tests and techniques that replicate occupational performance requirements in placing students in appropriate programs.

   The idea of "hands on" placement techniques is to evaluate the low achiever under circumstances that are relevant and non-threatening. It has been found that many disadvantaged persons are deterred from enrolling in occupational programs when they have to take formal tests.

4. Community-junior colleges should offer compensatory programs on an optional basis and expand learning laboratory facilities.

   Some investigations have shown that students who refused or avoided remedial studies not only have done as well as or better than the ones who had taken them but also have taken one semester less to accomplish their goals. No studies have been found to substantiate that students who have taken remedial studies have done better than students who have refused them.

   Counselors interviewed were in agreement that in many cases the loss of time and loss of self-concept by students from having to take these courses offset the good they produce.

   These arguments do not justify eliminating these programs. Undoubtedly, some students who take them and succeed would not have succeeded without them. The expansion of learning laboratories should be of value to the student who elects a compensatory program, as well as the disadvantaged person who does not.

5. Community-junior colleges should develop on-going product assessments of their programs for educationally disadvantaged students.

   The word "programs" means much more than special courses of study. It is important to compare the progress of disadvantaged students who are being tutored with those using learning laboratories, those receiving counseling services with those enrolled in regular programs. Progress will depend on valid, objective evaluation.

6. Community-junior colleges should expand the orientation given general faculty and staff in special characteristics and needs of disadvantaged students.

   On most campuses surveyed, concern and action were concentrated in the counseling staff and a few faculty members who had been specifically assigned in remedial areas.

7. Community-junior colleges should provide policies and procedures for assessing student skills, competencies, and understandings prior to enrollment, as a basis for determining level of course entry.

   This problem continues to be an area of concern, although several schools have begun to deal with this problem by issuing certificates that show hours of training completed when students are forced to drop out. Where appropriate, students receive credit for work completed when they re-enter a program. One school was found to give credit by examination.

Another technique worthy of special mention was developed by one community-junior college: the institution offered a one-year certificate program in conjunction with the county operated vocational-technical center. Students take their job courses at the vocational center and their academic courses at the college.

8. Community-junior colleges should determine why a larger number of disadvantaged individuals do not attend community-junior colleges and implement procedures to eliminate those reasons.

   As an example, the percentage of Blacks in grades 7-12 in ten selected community-junior college districts was 22 percent. The percentage of Blacks attending community- junior colleges in these ten districts was 11 percent.

B. The Council submits the following recommendations pertaining to vocational-technical programs for the disadvantaged in area vocational-technical centers. (Appendix B-3b)

   1. Area vocational-technical centers should establish criteria and procedures for identifying disadvantaged students and familiarize local educators with the criteria.

   2. Area vocational-technical centers should determine why more disadvantaged persons do not attend area vocational-technical centers and implement effective methods for recruiting disadvantaged persons needing occupational education.

      Many disadvantaged persons need assistance in understanding what occupational education opportunities are available and how they can utilize these for their personal benefit and the benefit of their communities.

   3. Area vocational-technical centers should determine why individuals drop out of programs before completing their training program.

   4. Area vocational-technical centers should improve existing programs for upgrading the performance of staff in the use of remedial methods and techniques for working with disadvantaged students.

      Guidance personnel, administrators, and staff at all centers studied stated that they need additional training if they are to help resolve problems of disadvantaged students and prevent students from leaving school before they obtain the education and training necessary to secure and hold satisfactory jobs.

C. The Council submits the following recommendations pertaining to high school vocational-technical programs for the disadvantaged.

   1. High schools should develop realistic goals and policies relevant to the occupational education needs of disadvantaged students. (Appendix B-3c)

      Investigation has shown that most high schools do not have well defined goals and policies relevant to disadvantaged students. Florida's apparent commitment to meeting the occupational education needs of the disadvantaged, as specified in the *Florida State Plan for the Administration of Vocational Education* and in recent State legislation, cannot be realized until educational institutions develop and implement realistic goals and policies and administrators and teachers adopt positive attitudes toward the disadvantaged.

   2. High schools should become committed to effective recruitment of disadvantaged students, including those who have interrupted their education, into vocational-technical education programs designed to meet their occupational education needs.

      The majority of materials utilized for recruitment and orientation presentations to students in junior high and high schools appeal to students who either come from middle-class homes or are middle-class oriented. On-site observations and interviews have shown that many disadvantaged students are not very interested in the vocational programs.

   3. High schools should use learning potential tests for guidance purposes only and not as screening devices.

      Such tests are culturally biased toward disadvantaged persons and tend to limit the opportunities

for disadvantaged persons to participate in certain occupational programs for which they are otherwise qualified. Personalized face-to-face, "cultural fair" tests for appraisal of the disadvantaged student's learning potential in actual or simulated learning situations are more valid when assessing the learning potential of the disadvantaged.

4. High schools should serve as referral agencies in arranging for their disadvantaged students to receive basic health care that is not provided by parents or guardians.

   By informing students of the services and assistance available through existing agencies and by providing necessary coordination, schools can help their disadvantaged students receive needed physical examinations, dental care, and adequate nutrition.

D. The Council recommends that training programs for blue-collar technicians, skilled, and semi-skilled trades be expanded: that semi-professional, white-collar technicians and clerical training be continued at the present level and that continuous evaluation be made of the employment demand for the various occupational classifications.

   Information collected by surveys and interviews conducted in selected industries indicates that vocational-technical education programs do not produce enough blue-collar technicians, skilled tradesmen and semi-skilled tradesmen, and that the current number of students in training for white-collar technicians and clerical positions is meeting current employment demands.

E. The Council recommends that minority groups persons be recruited into clerical, skilled, and semi-skilled trade programs. (Appendix B-4)

   Representatives of industry and business have stated that vocational-technical education should assist industry and business in meeting Equal Opportunity Commission requirements.

F. The Council recommends that an updated "Directory of Vocational Curriculums" be furnished on an annual basis to all industries as listed in the Florida Directory of Industries or as listed in some other appropriate directory. (Appendix B-4)

   Distribution of these directories to business and industrial firms would help representatives of business and industry become aware of the vocational-technical programs that are in operation, help business and industry find trained employees, and help graduates of vocational-technical programs find employment.

G. The Council recommends that alternate quarter-study, quarter-work or semester-study, semester-work cooperative programs be expanded in the post-secondary occupational programs. (Appendix B-4)

H. The Council recommends that resources be provided for developing and implementing a comprehensive, intensified, public information program for occupational education. (Appendix B-1, B-3, B-4, D)

   Many local, State and National commissions and councils, over a period of many years, have stated that the poor image of vocational education in many persons' minds prevents vocational education from serving its purpose effectively. The National Advisory Council in 1969 stated, "At the very heart of our problem is a national attitude that says vocational education is designed for someone else's children." The Council will not belabor the point, but does wish to emphasize that attitudes of many students, parents, educators, and the general public must be changed in order for public education to be centered around career development. A public information program, planned and coordinated statewide that utilizes the expertise of appropriate specialists and that involves persons representative of education, industry, labor, and business on the State, district and institutional levels, can help develop positive attitudes about occupational education.

I. The Council recommends that each district school board and junior college board of trustees organize a general advisory committee for occupational education.

   Florida State Board of Education Regulation 6A-6.68 and Community Colleges Regulation 6A-8.571 provide that general advisory committees for occupational education may be appointed . . ." to advise the board on the development, operation and evaluation of the occupational programs offered."

Goal III: *Evaluation should focus on the extent to which Council recommendations have received due consideration.*

The Council feels that its 1970 Evaluation Report was well received by the State Board for Vocational Education staff. The Director of the Division of Vocational, Technical and Adult Education mailed to all Council members on April 12, 1971, "A Summary of Activities Designed to Achieve Recommendations of the State Advisory Council on Vocational and Technical Education." This summary gave a brief description of activities related to each recommendation, or listed the agency to whom the recommendation had been referred, and showed that most of the recommendations were either being considered for implementation or were in some stage of implementation.

After additional study and deliberation, the Council resubmits for continued emphasis the following recommendations.

A. The Council recommends that the continued development and implementation of a total management information system for vocational-technical education be given the highest possible priority. (Appendix B-5 and 1970 Evaluation Report)

   A systematic procedure for obtaining follow-up information from graduates, non-graduates, and employers concerning the adequacy of vocational-technical education programs is essential for improving evaluation and for carrying out the intent of recent State legislation. The Council recommends that a follow-up procedure be implemented in 1971-72 and that it become an element of the total management information system when it becomes operational.

B. The Council strongly recommends that cost-effectiveness studies be conducted and utilized in planning, organizing, financing, and evaluating the total program for the most effective instruction in all phases of vocational- technical education. (Appendix B-2 and 1970 Evaluation Report)

C. The Council recommends that the problem of facility funding for vocational-technical facilities be given attention at the earliest possible date. Lack of facilities is a major constraint preventing enrollment of the 60 to 80 percent of the high school students who should be in occupational programs. (Appendix D and 1970 Evaluation Report)

D. The Council recommends that continued emphasis be given to developing and implementing a comprehensive counseling and guidance program. (Appendix D and 1970 Evaluation Report)

   The Council recognizes that many schools and community-junior colleges have excellent programs for personal and academic counseling, but the Council is concerned because many do not provide adequate career counseling. With continued leadership at State and institutional levels and adequate funds to carry out the expressed intent of recent State legislation, comprehensive counseling and guidance services can become operational in all schools.

E. The Council recommends the development of a systematic program for updating of vocational-technical education teachers in the technical phases of the occupation being taught. (Appendix D and 1970 Evaluation report)

   Teachers report that university sponsored workshops designed to meet certification requirements are valuable from the standpoint of teaching methods, procedures, and strategies, but that many workshops do not help them stay up to date in their particular technology.

F. The Council recommends that occupational proficiency courses and occupational remedial-compensatory courses be restructured into sequential levels--sometimes referred to as "laddering"--and that students be permitted to enter at any appropriate level, based on knowledge and ability, and to exit with a certificate at each level completed. (Appendix B and 1970 Evaluation Report)

   As an example, in the past a nurse's aide could not get credit for demonstrated competencies if she decided to enter training to become a licensed practical nurse, but had to start over. Similar situations have existed many training areas. The Council realizes that the utilization of the "laddering" concept in occupational training programs would require review of licensing requirements for some occupations, but the Council believes that cooperation, coordination, and articulation between the Department of Education and appropriate State licensing agencies could resolve problems that exist.

APPENDIX A

SUMMARY OF MAJOR COUNCIL ACTIVITIES

The Council, over a period of months, developed and adopted by-laws compatible with Public Law 90-576, State regulations, and the Council's emerging philosophy of purpose. Major components of the by-laws are:

1. objectives of the Council
2. membership requirements
3. provision for regular quarterly meetings and special meetings
4. duties and election of officers
5. staff functions
6. committee organization

The Council, based on recommendations of the evaluation committee and after thorough consideration, contracted for five evaluation studies. The evaluation committee has met on several occasions with the director of the studies to provide input, review progress reports, and has reported to the Council at regular meetings.

The state plan committee was involved during FY 1971 in an advisory capacity in the development of Parts II and III of the FY 1972 *Florida State Plan for the Administration of Vocational Education.* The committee invited appropriate persons representing the Division of Elementary and Secondary Education, the Division of Community Colleges, and the Division of Universities to express their concerns about the State Plan and met in work sessions with Vocational-Technical Division personnel who were working on the development of the new Plan.

Five public meetings were planned by the Council and conducted by Council representatives with the major purpose of learning the concerns and opinions of the general public about occupational education and the Plan under which programs are operated. A summary of these meetings is given in Appendix D.

The Council's executive secretary has: visited numerous institutions that conduct occupational programs; attended area and State Vocational Division staff meetings, accreditation meetings and other in-State meetings of persons concerned with occupational education; participated in one program determination survey; represented the Council at the Annual AVA Convention; participated in a meeting of the Southwide Research Coordinating Council; participated in Southwide meetings of State Advisory Council executive directors, and has attended two joint meetings of the National Advisory Council and State Advisory Councils with the Florida Council Chairman.

The Council arranged for the National Advisory Council's public information consultant to present Project SUCCESS to the Director of the Division of Vocational, Technical and Adult Education. Project SUCCESS is a model public information program designed to stimulate an awareness of the importance of career education and to develop a positive public image of vocational education. The project is designed to utilize public service time on television and radio and to use billboards.

The Director of the Vocational Division decided that Florida would participate in this program, and the first films are now being utilized.

On May 4, 1971, the Florida Deputy Commissioner of Education requested the Council to review proposed State Board of Education Regulations on Vocational Education . . . "to determine if, in the opinion of the members of the Council," the proposed regulations were consistent with the provisions of the Vocational Education Act of 1963 as amended in 1968. The Council reviewed the regulations on May 19 and forwarded recommendations resulting from their review to the Deputy Commissioner. The Council is assured that these recommendations were accorded due consideration before being presented to the State Board for Vocational Education for adoption.

APPENDIX B

This appendix contains summaries of five evaluation research studies of specific components of the Florida Vocational Education Program conducted for the Council under the direction of Dr. Richard H. P. Kraft, Associate Professor, Department of Education Administration, Florida State University. Each summary was prepared by the research associate that was immediately responsible for the study summarized.

The document containing the complete studies is entitled: *Perspectives on Progress: Career Education in Florida.* Copies will be sent to members of the State Board for Vocational Education, the Florida Department of Education, Florida community-junior colleges, area vocational-technical education centers, and district school superintendents. Single copies will be distributed to meet individual requests until the limited supply is depleted.

APPENDIX B-1

SUMMARY OF RESEARCH ON VOCATIONAL GUIDANCE

The objective of this study was to expand upon the evaluation done last year. Rather than confine the investigation to a small sample of districts, an attempt was made to see what findings would be applicable to the entire Florida scene. Four questions were used to guide this work:

1. Were last year's findings representative of all Florida?

2. Are the State goals for the guidance and counseling as outlined in Section 2.2 of the *Florida State Plan for the Administration of Vocational Education* being met?

3. What changes have occurred in the provisions for vocational guidance during the school year 1970-71?

4. Are there any specific suggestions or recommendations that could be made to assist in the completion of this study?

Interviews were conducted in eleven counties in Florida. These counties represent rural areas, smaller urban regions, and large urban districts and take in all five of the supervisory areas of the Division of Vocational, Technical and Adult Education. In addition, statewide information was gathered from Pupil Personnel Services of the Division of Elementary and Secondary Education and from the Florida Community-Junior College Inter- Institutional Research Council.

Counties visited were selected on the basis on being representative within the category of size and location. Personnel interviewed were selected either by the investigator or administrators within the districts as people best able to answer the question posed and who would be representative of all those affected by vocational guidance. Persons interviewed included guidance counselors, directors of vocational education, supervisors, superintendents, directors of vocational guidance, directors of area centers, principals, and parents.

A pattern for each interview was established at the beginning so that there would be consistency. The proceedings were kept to:

1. a brief comment on the nature of the study

2 reference to the State Plan and specifically Section 2.2

3. reference to the nature of vocational guidance within the county

4. reference to the vocational situation within the county

5. general concluding remarks and additional information.

The study director selected information from statewide studies by subjectively examining all information gathered and taking that which was felt to be pertinent.

Evaluations of all data collected were then made and the draft of the report developed. Considering the nature of the changes being made in guidance in the State at this time and the number of similar projects being developed, it was felt that the above procedure would be best to complete the objectives of the study.

Vocational Guidance in Florida remains primarily unchanged from last year! This is not to condemn all that is being done however. A review of plans under development, pilot programs, recent legislation, and the work of many outstanding individuals indicates that the future looks fairly bright if present efforts continue and funds are available. Plans have been made to reduce the counselor-pupil ratio, bring in para-professionals, develop better training programs, and supply occupational guidance information.

APPENDIX B-2

SUMMARY OF RESEARCH ON

COSTS AND BENEFITS OF CAREER TRAINING PROGRAMS

The objective of this study was to determine (1) What average investment rate of return can persons who acquire employable level skills in selected occupational training programs expect if they enter the same or related employment field for which they were trained? and (2) What average investment rate of return can society expect to receive as a result of providing these programs?

Monetary costs to the individual and society were linked to the marginal (extra) monetary benefits to the individual and society resulting from having attended selected occupational training programs.

Key Findings and Conclusions.--Occupational training yields astonishingly high monetary investment rates of return to the individual trainees and to society. Linking monetary costs with marginal (extra) monetary benefits was a significant design aspect of this study. To utilize this kind of design in future evaluative studies is highly recommended. Moreover, future cost-benefit studies should be expanded to include non-monetary benefits and should be directed toward specific target groups, such as disadvantaged and handicapped trainees.

APPENDIX B-3(a)

SUMMARY OF RESEARCH ON PROGRAMS AND SERVICES FOR THE

DISADVANTAGED IN FLORIDA'S COMMUNITY COLLEGES

The objective was to determine the extent to which Florida's community colleges are providing a predetermined set of activities and services which have proven to be or are generally accepted to be of value in educational programs for disadvantaged students.

Need.--The growing technology of the American culture has demanded and will continue to demand that an increasing proportion of the population be trained in more complex, technical skills. To accomplish this requires that human resources be cultivated from elements of society previously untapped. In short, training for the masses has become an economic necessity. This economic need is coincidental and interactive with the social demand for equal opportunity--a chance for upward mobility.

Major Findings.--Performance based criteria need to be instituted to supplant present abstract tests used as entrance requirements or for counseling instruments and for measures of qualifications for state licensing. Correlational and experimental research is needed to determine what educational strategies produce the greatest benefits for disadvantaged students and under what circumstances. Health and nutritional services are needed to support the educational programs for disadvantaged students.

APPENDIX B-3(b)

SUMMARY OF RESEARCH ON PROGRAMS AND SERVICES FOR DISADVANTAGED STUDENTS IN AREA VOCATIONAL-TECHNICAL CENTERS

Objective.--To determine the current state of vocational-technical education for disadvantaged in area vocational-technical centers and make specific recommendations for those areas that could be improved so as to afford better opportunity to the disadvantaged, increase the utilization of the abilities and talents of disadvantaged for their and the community's benfit, and to improve the quality of educational programs.

Methodology.--The methodology for this study consisted of a review of the literature related to the above objectives, followed by a field study of methods and practices now in effect. A questionnaire was designed to answer specific questions during the field visits and free exchange of information was encouraged in an effort to uncover additional areas that need to be explored.

Key Findings and Conclusions.--The key finding of this study is that comprehensive planning is necessary to develop improved and more effective methods for working with disadvantaged students. Specific mention is made of the necessity of fostering and encouraging cooperative planning and programming in recruiting disadvantaged, educating personnel in methods for working with disadvantaged, providing better orientation to the world of work, and evaluation to determine why students drop out before completing their training program.

APPENDIX B-3(c)

SUMMARY OF RESEARCH ON PROGRAMS AND SERVICES FOR DISADVANTAGED STUDENTS IN FLORIDA'S PUBLIC HIGH SCHOOLS

The findings, conclusions, and recommendations in the report are based on a comprehensive field study of vocational-technical education programs for disadvantaged high school students in Florida. A combination of three empirical data gathering techniques was utilized: interview, observation, and analysis of documents and records. The report includes research done in fifteen selected large, intermediate, and small school districts. The selected districts contain 4,519,961 of Florida's 6,789,443 residents. Nearly one million students are served by the elementary and secondary schools in these districts.

The report contains significant findings and conclusions regarding recruitment procedures, vocational counseling, teacher education and other issues relevant to educating economically disadvantaged students. The most striking information in the report, however, is that regarding the devastating effect of the attitudes and biases of many Florida educators on students in this classification.

The research revealed that many teachers and administrators are consciously and unconsciously biased toward children from minority groups and lower class families. It further disclosed that many educators lack understanding and insight into the nature of the disadvantaged student and often think and act in terms of stereotype images. Such behavior results in rapid and early withdrawal from school by large numbers of these students.

APPENDIX B-4

SUMMARY OF RESEARCH ON AN ASSESSMENT OF PUBLIC VOCATIONAL–TECHNICAL EDUCATION BY EMPLOYERS

This study was planned to collect data and information that would assist educators and administrators in Florida to answer such questions as: What is the employer's concept of vocational-technical education? And: What kind of curriculum changes are appropriate? Answers to these and other questions undoubtedly will provide helpful clues in developing new strategies for vocational-technical education planning. Thus, the underlying purpose of this survey was to stimulate improvement and expansion of education toward the world of work.

Methodology and Scope.–To obtain a valid and realistic assessment of public vocational-technical education in Florida, it is necessary to obtain the opinions of industry and business representatives about the program and its graduates. In order to provide an unbiased procedure for gathering this data, all companies employing 100 or more people in Florida were selected for survey. This criterion furnishes an impartial cross-section of various types of industry and business. Questionnaires were mailed to provide an opportunity for industry to evaluate the graduates and recommend improvements for the statewide vocational-technical education program.

A total of 706 questionnaires were mailed to Florida-based industries, businesses, and newspapers. Eighteen per cent of these companies responded. Those questionnaires returned after the February 5, 1971 cut-off date were not counted in the survey. The returns used represent coverage of 76,128 employees.

In addition to the questionnaires, interviews were conducted with fifty-two representatives of industry and commerce in five major urban centers of the State: Miami-Ft. Lauderdale, Tampa-St. Petersburg, Jacksonville, Orlando, and Pensacola. The main objective of the interviews was to examine specific relationships between education and employment.

Although the majority of employers are satisfied with our school output, it was recommended that specific areas be given increased emphasis in our vocational-technical schools. The recommendations made in this study reflect the attitudes expressed by these employers.

APPENDIX B-5

SUMMARY OF RESEARCH ON THE NEED FOR A COMPREHENSIVE MANAGEMENT INFORMATION SYSTEM

PART I: MANPOWER DATA NEEDS

In last year's evaluation report, *Vocational-Technical Education in Human Resource Development in Florida,* it was stated that skilled labor requirements are high where there is rapid economic growth based on improved technology (p. 301). In Florida the need or demand for abundant but fundamentally ignorant or unskilled workers is declining rapidly. Thus an educated populace and a supply of informed and skilled personnel may be the key to the future economic growth through the attraction of new industries.

The objective of this year's study was to show the need for a comprehensive management information system. The rationale for such an information system is to eliminate much of the "skills gap" which has been perpetuated to a large extent by the practice of industries importing skilled labor from other states as the need dictated. By providing the necessary manpower "from within," the demands of the business community can be satisfied, while at the same time the maximum employment possibilities for graduates of the educational institutions within a region or state can be assured (as well as for school dropouts) due to direct training for fields with high manpower demands, as well as rapid matching of qualifications for specific jobs available.

After all: only 20 percent of Florida's manufacturing firms advertise in local newspapers to make adjustments to the shortage of qualified personnel. And: only 17 percent contact the local school system and ask school officials to establish specific training programs.

Thus, it was recommended that a continuing assessment be made of the extent and efficiency of communication within the education-labor network, i.e., industry, the employment service, and the various education units.

APPENDIX B-5

PART II: CONTINUING RESEARCH IN THE DEVELOPMENT OF A MANAGEMENT INFORMATION CENTER

The investigation indicated that only the following efforts have been programmed for the 1971-72 fiscal year:

A. Pinellas County (effective July 1, 1971) will be responsible for processing student, teacher course and program data for twenty-two area vocational centers and all schools offering vocational programs in Pinellas County with the exception of the community college.

Pinellas County also will continue to process the VTAD-20 forms statewide for those schools and districts not under the new student enrollment system.

According to the Department of Education, Vocational Division:

. . . it is felt that indispensable management information may be generated as a by-product of the instructional process as in the pilot student enrollment and teacher information system in Pinellas County which is now ready for statewide implementation. Data and reports regarding student enrollment, teachers, and facilities developed in the pilot project include the following:

1. Attendance reports – updated monthly from output of data supplied by instructors on each class.
2. Instructor schedules.
3. Student statistical data.
4. A consolidated high school cooperative education report – this report has eliminated the necessity of individual instructor reports for each unit.
5. Student interest questionnaire.
6. Labels (advisory committees, Department of Commerce, students, and all divisional personnel).
7. Other statistical capabilities include:
    a. Student schedules
    b. Facilities utilization
    c. Student followup
    d. Student attendance hours
    e. Numerous combinations of the above data
8. Labor market information.

Implemented statewide, the total system will include all data elements and reporting capabilities developed through the pilot project. The techniques and methodology will be extended to

encompass all 67 districts including secondary schools, area vocational education centers, and community colleges.

The advantages of statewide implementation include:

1. Non-duplication of enrollment data.
2. Timely and accurate information to meet Legislative, State, and Federal reporting requirements.
3. Operational efficiency by eliminating duplication of effort.
4. Providing the vital link for a complete vocational education information system.
5. Relieving administrators, supervisors, and teachers of data gathering and reporting tasks, enabling them to apply more time to their primary responsibilities.

B. Dade County (Lindsey Hopkins) has been contacted in regard to maintaining and operating a student placement and follow-up system which will be developed and ready for implementation by July 1, 1972. The personnel responsible expressed an interest in the role of operating this system. A decision, however, has not been made as to who will do the processing.

Recommendations:

Lack of statewide information has been a serious handicap to the effective evaluation of vocational-technical educational programs by the Study Group for Statewide Evaluation of Vocational-Technical Education in Florida.

Last year's recommendations were:

1. A Management Information System be developed and implemented with the highest priority.
2. In order to accomplish this recommendation, additional funding be provided.

This year, the following recommendations are submitted to the Advisory Council with the utmost urgency.

1. That the Management Information System for Vocational, Technical and Adult Education again be given top priority.
2. That complete systems analysis study be undertaken immediately.
3. That the Guidance Subsystem be added to the MIS.
4. That a report of what disposition the Department of Education will make of the Advisory Council's recommendations be requested.

APPENDIX C

SYNOPSIS OF STATE PLAN GOAL ACCOMPLISHMENTS

The Council planned to include in this appendix a summary of all State Plan goal accomplishments in order that interested persons could compare year-end accomplishments with pre-established objectives. This has not been possible for all sections of the Plan because final enrollment and other data which is compiled by the Vocational Division is not available at the time this report must be prepared. There are several other indicators of progress which have been utilized in preparing the summaries that follow.

Instructional Program

At the secondary level five new agricultural programs were initiated and 12 on-going programs were expanded. Distributive programs were conducted in 116 high schools, and enrollments in diversified programs increased by approximately 400 students, which is a 10% increase over FY 1970. Home economics gainful employment programs have received emphasis during FY 1971, and enrollments have increased. Vocational office education programs were conducted in 59 of the 67 school districts, and preliminary reports indicate that job placements have increased over FY 1970.

At the post-secondary level distributive education programs were conducted by 25 community colleges and 18 area vocational schools, and office education programs were provided by 27 community colleges and 22 area schools. Post-secondary home economics enrollments totaled 3,200.

Disadvantaged and Handicapped Programs

Programs for disadvantaged persons were conducted in each vocational program area, i.e., home economics, distributive, industrial, agricultural, etc. Nine new distributive education programs were initiated in four districts designated depressed or with high youth unemployment. A mobile unit to take classes to the disadvantaged became operational in one district; and agricultural and office programs were started in seven of the eight districts designated depressed by the Department of Commerce or CAMPS.

In FY 1971, 20,081 disadvantaged persons were served in special programs, and 51,471 were reported as being enrolled in regular vocational programs. A total of 1,605 handicapped persons were reported enrolled in vocational training programs.

Teacher Education

The *Master Plan for Vocational and Adult Teacher Education*, as a part of the total effort of the Board of Regents to expand and strengthen teacher education in the state, was up-dated and expanded this year. The plan projects teachers needed in each vocational service and reports the geographic service areas of state universities and the distribution of vocational-technical education teachers employed in each area, reports the number of institutions offering or planning to offer preparatory and inservice vocational teacher education programs, and recommends steps to meet the preservice and inservice needs of teachers.

The VTAE Division, in cooperation with the Florida Board of Regents and the state universities, has developed a *Vocational and Adult Teacher Education Institution Program Planning Guide*. This planning guide will assist the universities in making long-range plans for effective teacher education programs based upon statewide teacher needs.

Florida Vocational and Adult Teacher Education Guidelines was developed by representatives of the VTAE Division in consultation with teacher educators; local vocational and adult education personnel; advisory committees; and representatives of the Teacher Education Section, Bureau of Teacher Education, Certification and Accreditation Section, Department of Education. It is expected that teacher-education institutions and local educational agencies will use the guidelines in planning, implementing, and evaluating preservice and inservice vocational teacher education.

The State Plan, projected for FY 1970-71, the enrollment of approximately 1,000 students in vocational teacher preparation (preservice) programs. The participating universities reported 1,176 students enrolled.

The State Plan projected that 2,000 vocational instructors would receive inservice training. The participating universities reported 1,302 persons receiving inservice instruction during FY 1970-71.

Other teacher training and staff development activities such as conferences, workshops, and institutes conducted by the VTAE Division and local educational agencies have provided inservice training for approximately 2,000 vocational instructors, supervisors, and administrators during FY 1970-71.

Research and Evaluation Function

As defined in the Florida State Plan, the broad objective of the Research Coordinating Unit is to initiate, coordinate, and, in some instances, to conduct studies needed to improve vocational education in the state. These studies are classified as evaluation, development, dissemination, and demonstration in nature.

The following 1970-71 programs indicate the scope and trend of the activities throughout the Vocational Education Division. All of these programs were funded through the Vocational Education Amendment of 1968, except three evaluation projects indicating State funding from the Research and Development Act.

Evaluation Projects

1. *A State-wide Evaluation of Vocational Technical Education in Florida*. A statewide review covering vocational education programs, services, and activities in Florida has been completed. Consideration was given to target groups, target areas, and vocational program emphasis so that recommendations for improving the vocational program can be made. Florida State University, Dr. Richard H. P. Kraft, $57,000,00.

2. *Planning Grant to Determine Status of Vocational Education in Elementary Schools of Florida*. A survey of elementary education programs in Florida has been conducted to determine the need for occupational exploration programs. Florida State University, Dr. W. H. Hinely, $5,000.00.

3. *Evaluation of Exemplary Vocational Education Programs in Dade, Duval, Escambia and Hillsborough Counties*. The objective of this project is to analyze the effectiveness of an exemplary occupational program for disadvantaged urban students. University of West Florida, Dr. Lawrence H. Perkins, $60,548.00.

4. *Development of a Research and Evaluation Design for an Exploratory Vocational Program at Clearwater Comprehensive Junior High School.* Develop and implement a research design resulting in an evaluative model and instruments needed to assess the achievement of product and process objectives in an exploratory vocational program. Clearwater Comprehensive Junior High School, Pinellas County, $9,908.00.

5. *A Follow-Up Study of the 1965-1966 High School Cooperative Distributive Education Students.* To determine the present broad occupational categories of 1965-1966 high school graduates of Distributive Education; job levels, frequency of job changes. Florida Atlantic University, Dr. Leroy M. Buckner, $2,268.00.

6. *Employability Skills*. Catalog of objectives and test items. Florida A & M University, $30,890.00. Florida R & D Program.

7. *Horticulture*. Catalog of objectives in ornamental horticulture. Test items will be developed for the objectives related to initial employability. University of Florida, $32,702.00. Florida R & D Program.

8. *Typewriting Skills*. Catalog of objectives in typewriting skills in business education. Test items for terminal objectives will be developed. University of Florida, $31,526.00. Florida R & D Program.

Development Projects

1. *A Proposal for a Study of Post-Secondary Occupational Education in Florida (IRC).* Inventory characteristics of post-secondary occupational programs in selected junior colleges and area vocational technical centers to provide information needed for decision making. University of Florida, Dr. Michael I. Schafer, $14,915.00.

2. *Industrial Arts Elementary Curriculum Project.* Develop and evaluate the effectiveness of a

pre-career development program for elementary and middle school disadvantaged youth. Florida State University, Dr. James R. Heggen, $49,683.00.

3. *FAIS: Fusion of Applied and Intellectual Skills.* Develop curriculum for students in K-5 which will integrate vocational and academic skills, provide vocational counseling, and improve attitudes toward the world-of-work. University of Florida, Mrs. M. F. Smith, $66,659.00.

4. *VIEW: Vital Information for Education and Work.* Implement the VIEW System in a rural and urban school district and to make an evaluation of the effectiveness of the system in occupational counseling. Broward County, Mr. L. E. Paige, $57,642.00; Washington County, Mr. W. L. Kitching, $35,418.00.

5. *Development and Evaluation of Consumer Education Teaching Materials for Disadvantaged Students and Underprivileged Adults.* Develop and evaluate the effectiveness of instructional materials in consumer education which are appropriate for disadvantaged youth and adults. Florida State University, Dr. Agnes F. Ridley, $26,290.00.

6. *A Project to Develop Learning Packets in Diversified Cooperative Training.* Develop five student-centered learning packets to assist Diversified Cooperative Training coordinators in the implementation of identified instructional goals for occupational related areas. University of South Florida, Mr. D. P. Jaeschke, $10,490.00.

7. *A Planning Project to Study Agricultural Education Needs in Florida.* Design a model for studying the occupational and educational needs for agriculture programs in Florida. University of Florida, Dr. J. W. Hensel, $23,575.00.

8. *Health Related Occupations.* Provide career exploration of health related and other occupational fields for disadvantaged youth. An instructional program conducted in a mobile unit. Franklin County, $40,000.00.

Dissemination Projects

1. *Identifying Implications of Research for Industrial Teachers.* Identify recent research studies in trade and industrial education and develop implications into useable form for vocational industrial teachers. Florida State University, Dr. R. O. Gallington, $5,800.00.

2. *The Establishment of a Vocational Research Information Center.* Establish satellite vocational education research information centers in 60 institutions thoughout the state. Local District and Junior College Boards, $29,627.00

Demonstration Projects

1. *An Exemplary Model for a Total Ecological Approach to Non-Graded Vocational Programs in Separate Centers.* Develop educational and occupational skills, positive social behavioral modes and improved ecological patterns for urban disadvantaged youth. Duval County, $101,846.00; Escambia County, $98,291.00; Hillsborough County, $107,973.00; Dade County, $101,449.00.

Evaluation projects reflect a concern for determining effectiveness of local or statewide programs, and development of components of the statewide evaluation model. Development projects are concentrated on development of components for the comprehensive statewide model of career development. Dissemination projects are concerned with the distribution of recent research and research-related studies. The demonstration project composed of four centers located in urban districts, provides the implementation of a specific exemplary program for disadvantaged youth.

Guidance and Counseling

Funds were used during the 1970-71 school year to:

(1) Provide group and individual guidance for development of career choice. The Vocational Guidance Consultant sponsored several county wide counselor in-service workshops concerning the upgrading of career development skills. In addition the Vocational Guidance Consultant provided individual counselor consultation services for development and expansion of local school Career Development Programs.

Assistance was rendered in the development of school facilities for adequate guidance programs.

(2) Continue development and expansion of guidance services at area vocational-technical education centers. Community colleges designated as area vocational-technical centers have assigned a counselor to meet career development responsibilites. The latest survey showed that 42 counselors were employed by area vocational-technical centers.

(3) Provide placement for follow-up services for secondary and post-secondary vocational students. The Vocational Guidance Consultant adopted a statewide vocational job placement program and over 2,000 employers were extended invitations to visit the vocational-technical centers and interview students for employment on vo-tech days.

(4) Update the directory on Post Secondary and Adult Occupational Curriculums for Florida. The data for the directory has been received from the local counties and has been compiled for printing. At present funds have not been allocated for printing the directory.

(5) Provide and maintain community liaison between vocational students and employers throughout the state. Several inservice workshops were conducted, in which counselors were sent out in the community to work with employers from various businesses and industries.

(6) Provide workshops, institutes and other in-service activities for vocational guidance and counseling personnel. The Vocational Guidance Consultant coordianted a statewide Career Development Conference sponsored by the Pupil Personnel Section, Vocational Education Division, and Division of Community Colleges.

Youth Organizations

Although quantifiable objectives for vocational youth organizations were not listed in the State Plan, there are several activities which indicate achievement.

The vocational program areas of agriculture, home economics, industrial, business, and distributive education sponsor six vocational youth organizations for secondary students and two for post-secondary students. State staff representing the various program areas coordinate the state program of each youth organization, and vocational teachers supervise local chapter activities.

Cooperative Education Clubs of Florida (CECF) activities are designed to compliment and supplement cooperative vocational education instructional activities. Emphasis is placed on the development of citizenship, leadership, scholarship, and vocational proficiency. Club members cooperatively engage in school and community service projects, and individual competition is encouraged through designated club contests. Major stress is placed on activities at the local club level. CECF is a Florida club program with which any local cooperative vocational education program may affiliate.

Distributive Education Clubs of America (DECA) provide youth activities relating to the Distributive Education programs of instruction offered in the secondary schools. The major purposes of this youth program are:

(1) To develop a respect for education in marketing and distribution which will contribute to occupational competence.

(2) To promote an understanding and appreciation for the responsibilities of citizenship in our free, competitive enterprise system.

The Florida Association of DECA continues to expand its program of youth activities as represented by the following:

(1) In 1969-70, Florida ranked *11th* in the nation in membership in the high school division with a total of *2428* members in *108* chapters.

In 1970-71, the Association had increased its membership to *3637* in *157* chapters, and ranked *7th* in the nation.

(2) The average chapter membership in 1969-70 was *22* which gave Florida a national ranking of *11th*. In 1970-71, the average chapter membership had increased to *24*, bolstering Florida's position to *5th* in the nation.

(3) District leadership conferences were initiated.

Florida Association of Managerial Education (FAME) constitutes the junior collegiate division of DECA in Florida. Students enrolled in associate degree or certificate programs in marketing and distribution in Florida's junior colleges are eligible for membership.

Organized in the Spring of 1965, FAME continues to reflect a rapid rate of growth:

(1) In 1969-70, membership totaled *320* persons in *14* chapters which ranked Florida *5th* in the nation. In 1970-71, Florida continued its fifth-place ranking with a membership of *386* in *18* local chapters.

(2) In 1969-70 and in 1970-71, Florida students were elected to the office of Southern Regional Vice-President.

(3) The 1970-71 school year saw the expansion of the competitive events program with the initiation of the Sales Representative competition, bringing the total to eight events.

Future Business Leaders of America (FBLA) and PHI BETA LAMBA (PBL) activities are planned to help vocational business education students develop leadership abilities, make intelligent occupational choices, develop character, and develop desirable citizenship traits.

FBLA (for secondary students) and PHI BETA LAMBA (for post-secondary students) chapter representatives participate in district, state, and national leadership conferences and in competitive activities. Membership in both organizations has increased significantly during the past school year, and the Florida Association hosted the 1970-71 National Leadership Conference. During this National Conference, Florida participants won twenty-three (23) national awards and the first place award for chartering the most chapters during the 1970-71 school year.

Future Farmers of America (FFA) activities provide students enrolled in vocational agriculture education programs with experiences planned to develop leadership, citizenship, and occupational competence. Although the FFA was one of the earliest vocational youth organizations established in Florida, the membership continues to grow and participation by members continues to expand, as indicated by the following:

(1) Membership in 1970-71 was 12,500, an increase of 200 members.

(2) A ten per cent (10%) increase in participation in the FFA foundation awards program.

(3) An expansion of the awards program to involve more agri-business awards for members who are not agriculture production oriented.

(4) The number of members qualifying for the State Farmer's Degree increased from 200 in 1969-70 to 238 in 1970-71.

(5) Local FFA chapters are participating significantly in a new community service program sponsored by the National FFA Organization called, "Build Our American Communities (BOAC)."

Future Homemakers of American (FHA) chapters provide students enrolled in vocational home economics education programs with activities planned to foster the development of leadership and citizenship competence, and provide opportunities for community service. This year the FHA authorized two types of chapters:

(1) FHA chapters for all students in vocationally oriented home economics.

(2) HERO-FHA chapters, an option available to chapters composed entirely of wage-earning students in classes of home economics related occupations.

A few of the many activities and achievements were:

(1) State leadership conference.

(2) Publication of the *Florida Future Homemaker* magazine.

(3) Scholarship program.

(4) Awarding 29 level three degrees.

(5) Awarding 13 honor roll chapter certificates.

(6) Numerous local chapter community service and leadership activities.

Vocational Industrial Clubs of America (VICA) provides students enrolled in vocational industrial education programs with activities planned to foster citizenship, leadership, and occupational competence.

VICA membership has increased over thirty-three per cent (33%) in the past two years. It is anticipated by state level leadership that the state membership will increase from 2,283 in 1970-71 to over 5,000 in 1971-72.

Some significant activities during 1970-71 school year were:

(1) Chapters were active in 43 schools.

(2) Delegates attended the National VICA Leadership Conference.

(3) Held State Leadership Conference.

(4) Provided state level awards.

(5) Conducted area drives in conferences.

Membership in Eight Florida Vocational Youth Organizations:

1969-70 and 1970-71

NAME OF ORGANIZATION	NO. OF MEMBERS		1970-71 CHANGE IN MEMBERSHIP	1970-71 CHANGE IN NO. OF LOCAL CHAPTERS
	1969-70	1970-71		
FFA	12,300	12,500	200	−14
FHA	14,990	13,047	−1,943	− 6
DECA	2,428	3,637	1,209	49
FAME	320	386	66	4
FBLA	1,800	2,600	800	25
PBL	304	454	150	5
CECF	4,850	5,214	324	26
VICA	1,963	2,283	320	7
TOTAL	38,955	40,121	1,126	96

Several of the Florida youth organizations have state level advisory boards, and they work very closely with business and industry in planning their contest and awards program, as well as other activities. Historically, those organizations that have been guided and assisted by full-time state level youth consultants have had the most comprehensive programs of work, and it is anticipated that as more staff time is devoted to this function, that the scope of activities will increase.

APPENDIX D

PUBLIC MEETINGS

One of the responsibilities of the Florida State Advisory Council on Vocational and Technical Education is to ". . . provide for not less than one public meeting each year at which the public is given opportunity to express views concerning vocational education."*

This year the Council conducted public meetings in Pensacola, Clearwater, Orlando, Miami and Jacksonville. Each of these cities is located in a major economic area and population center and represents each of the Vocational-Technical Division's five supervisory areas. A Council committee was responsible for conducting each meeting and a different Council member chaired each meeting; however, the general format was the same for all meetings. In an effort to make the meetings interesting and meaningful to persons in attendance, to supply information to the Council, and to encourage dialogue, each county school board and community-junior college was requested to prepare a brief illustrated presentation that focused on:

1. the kinds of occupational education programs currently in operation
2. enrollment and follow-up data
3. funds being utilized–Federal, State and local
4. unmet needs--high school and adult--and constraints that prevent implementation of programs to meet identified needs

The detailed planning of each meeting involved representatives of the county school board, the local community-junior college, the Department of Education, and the Council. A special effort was made to inform and secure the attendance and participation of the following:

1. vocational-technical advisory and craft committees persons
2. citizens concerned about vocational education
3. local educators--especially deans, principals, guidance counselors, and instructors

The cooperation and assistance of persons representing local institutions was gratifying. The representatives were generous in the use of their time, they presented the requested information orally in the requested form and most submitted written reports, and all exerted effort to inform the local advisory committees and the lay public of the meetings.

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* Public Law 90-576, Part A, Section 104 (b) (3).

Table 1 summarizes attendance by category of persons attending public meeting conducted by the Council.

Table 1 –Attendance at Public Meeting

	Pensacola April 27	Clearwater April 29	Orlando May 6	Miami May 11	Jacksonville May 13
Council Committee	3	5	3	3	3
VTAD Consultants	5	6	7	2	4
Local Community	79	114	58	218	135

The majority of the needs and concerns expressed by persons attending the five public meetings is synthesized below:

County School Board Staff

1. Comprehensive high schools

   Students do not like to leave their home school for part of the day to attend a special vocational-technical school.

   Excluding useful home economics–most high schools are serving the occupational training needs of less than 20 percent of their high school students.

2. Pre-vocational and occupational information needs to be an integral part of the middle school curriculum.

3. Valid information on job opportunities and manpower needs is needed for program planning and career counseling.

4. A shortage of funds for facility alteration and for new facilities is a major constraint which prevents enrolling a larger percentage of high school students in occupational programs.

5. Urban areas have difficulty providing transporation from the "home school" with a limited vocational offering to a school that conducts training programs desired by students.

6. A comprehensive program of career guidance, student follow-up, and placement service is needed.

7. An in-service teacher education program that adequately provides for updating of the technical skills and knowledge of the occupation being taught is needed.

8. The image of vocational education needs to be improved.

Community-Junior College Persons

1. The image of occupational education needs to be improved. Many parents, students, and counselors view it as second class.
2. Multi-level funding of occupational programs needs to be implemented.
3. Forward funding needs to be provided for new and expanding programs.
4. Lack of facilities for occupational programs prevents needed expansion.
5. Additional fulltime faculty are needed.

Other Persons in Attendance

1. There needs to be better cooperation, coordination, and articulation between regular high schools, area vocational-technical schools, and community-junior colleges.
2. The image of vocational education needs to be improved.
3. The percentage of high school students enrolled in vocational-technical education needs to be greatly increased.
4. Teachers need to systematically up date their technical information in their particular technology.
5. There needs to be more business/industry involvement in student career orientation.
6. Teacher certification requirements should be based on needed competencies.
7. There should not be separate vocational high schools; rather, high schools should be comprehensive. It is not desirable to separate students in schools because they are in a vocational education program.
8. There needs to be adequate coordination between appropriate agencies to assure transferability of community college credit.
9. There needs to be a coordinated total manpower delivery system.
10. Occupational programs need to be effectively coordinated with available jobs.
11. Schools need placement services for their students.
12. All students leaving school should have at least entry level skills.
13. Preferential funding is needed for new programs.
14. Multi-level funding is needed for vocational programs.
15. Funding requests submitted by community-junior colleges and district boards to the Vocational-Technical Division need to be approved early enough to permit adequate planning before programs begin.
16. Permanent community vocational-technical advisory committees need to be organized to coordinate total community efforts in occupational education.

VT 017 555

VT 017 555
SENIER, JOHN, AND OTHERS
A SUPPLY-DEMAND MODEL FOR VOCATIONAL-EDUCATION PLANNERS: REPORT NUMBER I.

PENNSYLVANIA STATE UNIV., UNIVERSITY PARK. DEPT. OF VOCATIONAL EDUCATION.
PENNSYLVANIA STATE DEPT. OF EDUCATION, HARRISBURG. BUREAU OF VOCATIONAL, TECHNICAL, AND CONTINUING EDUCATION.

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DESCRIPTORS - PROJECTS; MODELS; *LABOR SUPPLY; LABOR MARKET; OCCUPATIONAL SURVEYS; LABOR FORCE; *MANPOWER NEEDS; *MANPOWER UTILIZATION; *VOCATIONAL EDUCATION; *PROGRAM DEVELOPMENT
IDENTIFIERS - *PENNSYLVANIA

ABSTRACT - AS PART OF A LARGER STUDY AIMED AT DEVELOPING A SUPPLY/DEMAND MODEL OR DATA BANK FOR USE IN VOCATIONAL PROGRAM PLANNING, THIS STUDY WAS CONDUCTED TO DETERMINE WHAT HAS HAPPENED TO THE 74,266 GRADUATES OF PENNSYLVANIA'S PUBLIC SECONDARY VOCATIONAL-TECHNICAL PROGRAMS IN 1970 AS WELL AS TO DETERMINE IF THERE WERE ANY DIFFERENCES AMONG GRADUATES BY INSTRUCTIONAL PROGRAM. QUESTIONNAIRES WERE USED TO OBTAIN THE DATA. FINDINGS INCLUDE: (1) AN OVERWHELMING MAJORITY OF THE STUDENTS WERE EITHER ATTENDING SCHOOL OR COLLEGE FULL-TIME OR IN THE MILITARY, (2) FIVE PERCENT OF THE GRADUATES WERE NOT LOOKING FOR WORK, (3) THE GRADUATES FROM THE TECHNICAL PROGRAMS ACCOUNTED FOR THE LOWEST PERCENTAGE OF THE LABOR FORCE WHILE GRADUATES FROM THE TRADE AND INDUSTRIAL PROGRAMS AND BUSINESS OFFICE PROGRAMS ACCOUNTED FOR THE HIGHEST PARTICIPATION RATES, AND (4) ABOUT 63 AND 64 PERCENT, RESPECTIVELY, OF THE VOCATIONAL GRADUATES FROM THE REST OF THE STATE AND PHILADELPHIA ENTERED THE LABOR FORCE UPON GRADUATION, AS OPPOSED TO APPROXIMATELY 56 PERCENT FROM PITTSBURG. TABLES AND MORE DETAILED INFORMATION SUPPLEMENT THE TEXT. (SN)

THE
PENNSYLVANIA
STATE
UNIVERSITY
DEPARTMENT
OF
VOCATIONAL
EDUCATION

A SUPPLY-DEMAND MODEL FOR VOCATIONAL-EDUCATION PLANNERS: REPORT NUMBER I

JOHN SENIER
JAMES SLICK
JOANNE SENIER

Pennsylvania Department of Education
Bureau of Vocational, Technical and Continuing Education
Research Coordinating Unit
(Project No. 19-1036)

VOCATIONAL — TECHNICAL EDUCATION **Research Report**

JULY, 1972

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A SUPPLY-DEMAND MODEL FOR VOCATIONAL EDUCATION PLANNERS: REPORT NO. 1

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July 1972

Pennsylvania Department of Education
Bureau of Vocational, Technical and Continuing Education
Research Coordinating Unit
(Project No. 19-1036)

INTRODUCTION

Data and information concerning the number of graduates in the various occupational specialities on a labor market basis has been provided in a thorough manner by the Research Coordinating Unit for Vocational Education in Harrisburg for the past six years. Maximum utilization of this important information would occur if reliable information relative to what vocational students do upon graduation could be made available. This is the major purpose of this report.

The immediate after-graduation plans of the graduates of 164 vocational programs in the Pennsylvania secondary and area vocational schools are reported herein. This report shows that graduates of certain programs go into a variety of related type occupations, whereas graduates of other programs move into only one or two kinds of jobs. Furthermore, those not entering the labor market upon graduation are identified. Perusal of the data reveals that in certain vocational programs a large number of the graduates go on to further education. Information of this kind is needed by vocational program planners in order to more effectively meet the labor market needs of a specific labor market area and the Commonwealth of Pennsylvania as a whole.

John Senier, Research Assistant for the Bureau of Educational Research of the Pennsylvania Department of Education is the originator of the project and has served as its main thrust. James Slick, Research Assistant in the Department of Vocational Education at the Pennsylvania

State University also served in this project. Joanne Senier assisted in the preparation of this report. These individuals are to be complimented for a job well done. The project director also wishes to acknowledge the important financial support provided by the Bureau of Vocational, Technical and Continuing Education of the Pennsylvania Department of Education. We hope that the information in this report contributes to a more effective coupling of people and jobs.

Angelo C. Gillie
Professor of Vocational Education
Project Director

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OVERVIEW

Although it has been recognized in recent years that there is a real need to train students for vocations which they can enter directly or shortly after leaving high school, the actual curriculum planning for such vocational programs, has, to a large extent been handicapped due to the fact that labor market information is limited. At present, the most reliable information on industry needs can be obtained from the various local offices of the Bureau of Employment Security, Pennsylvania Department of Labor and Industry. Unfortunately, because that Bureau is primarily interested in present job openings and industrial growth rather than occupational growth, information from that Bureau is of limited value to vocational education planners. To overcome the problem of limited information, a number of efforts have been made by school districts and educational planners to conduct surveys of their local areas. However, industry surveys are costly, are open to question as to their accuracy and, all too often, industries cannot provide information on their needs beyond a two year period.

In order to deal with the problem of supplying information on manpower needs for local areas, the Bureau of Labor Statistics, U.S. Department of Labor, developed a model for projecting manpower needs. In a modified form, this model was used to develop the occupational projections included in a study by Walter M. Arnold entitled,

Vocational, Technical and Continuing Education in Pennsylvania: A Systems Approach to State-Local Program Planning, and in, Planning Vocational Education Programs in Pennsylvania: Guidelines for the Use of Labor Market Information, by Messrs. James F. McNamara and Stephen J. Franchak. However, field experience indicates that those occupational projections have certain limitations and need to be revised as they are based on 1960 census data.

Also, in an effort to evaluate if the various vocational programs are meeting the needs of a given labor market (LMA), the Research Coordinating Unit for Vocational Education (RCU) has been gathering data since 1966. This data relates to the supply of occupationally trained graduates with less than a baccalaureate degree. Thus, it was made possible for vocational education planners to determine to what extent annual needs for labor are being met by present course offerings. The nine sources of trained graduates from which the RCU collects data are: Public Secondary Vocational and Technical Schools; Community Colleges; Private Trade and Technical Schools; Private Business Schools; State Trade and Technical Schools; Manpower Development and Training Programs; State Retraining Programs; Two-year Programs in Four-year Colleges, and Private Junior Colleges.

This information is a valuable addition to program planners and vocational education planners are now aware of the full extent of vocational education offered by the other training institutions. However, in an effort to combine the supply information with the projected demand for a given occupation, several difficulties were encountered including: (a) at present only scant information is

available as to what occupations graduates enter; (b) the percent that do not participate in the labor force due to entering the Armed Forces, continuing their education at the post-secondary or college level, and for other reasons (such as marriage, disability, etc.) is unknown. For this reason, past efforts to develop a Supply/Demand Model have been based on the assumption that all graduates trained for a particular occupation enter that occupation.

In an effort to develop occupational projections and to determine the actual supply from all training institutions so that a viable Supply/Demand Model could be developed, the Department of Vocational Education at the Pennsylvania State University, with funding from the Bureau of Vocationa, Technical and Continuing Education, undertook a two phase project. This project is designed to generate information on occupational growth in Pennsylvania and the 47 LMA's, to make a detailed determination as to what occupations graduates by programs from the various training institutions enter, and to evaluate the supply and demand in terms of a computer based systems approach.

This, the first report on The Supply/Demand Model for Vocational Education Planners, details the results of the research which sought to determine the occupations entered by public secondary vocational and technical school graduates. Furthermore, it describes both the development and use of the Instructional Program/Occupation Matrix for adjusting future occupational supply from that source.

STATEMENT OF THE PROBLEM

In any society, the supply of labor and the demand for that supply is of vital concern. Recognizing this fact, it was specified in the Vocational Education Act of 1963 (P.L. 88-210) and in the 1968 Amendment (P.L. 90-~~247~~576) that there be periodic evaluations of state and local vocational education programs utilizing federal monies. Further, whenever possible, vocational curriculum planning should be based on current and projected manpower needs and the resources available to meet those needs.

Seeking to comply with both the letter and spirit of these acts, the Pennsylvania Research Coordination Unit for Vocational Education (RCU) has been gathering data and information related to manpower needs and the various human resources available from nine training institutions offering less than a baccalaureate degree (1, 7). This information has been disseminated to State and local vocational education planners in an effort to help them ascertain to what extent annual manpower requirements are being met by present course offerings. However, in ascertaining what occupations were entered by the graduates from the various instructional programs, it was assumed that all the graduates trained for a particular occupation entered that occupation. This was done because information was lacking as to the percent entering the Armed Forces, continuing their education, entering the work force in an occupation

other than the one for which trained and what percent do not enter the labor force due to disability, marriage, and the like.

Also, at present there is a great concern, stemming from the career education philosophy, to revise curricula based on a cluster concept. Although this need is real, at present, there is only limited information available as to the occupations entered by graduates from the various vocational instructional programs. Therefore, it is extremely difficult for program planners to determine if a particular instructional program is too narrow in its training (i.e.--training for one occupation) or too broad (i.e.--making it difficult for a graduate to find any job directly related to the field of training).

In an effort to resolve these problems, a two phase study was undertaken. This, the first study sought to determine what has happened to the 74,266 students who graduated from the public secondary vocational-technical programs in 1970. Specifically, the questions related to this study were as follows:

1. What percent of the graduates from the public secondary vocational-technical programs did not enter the labor force and, what were the reasons for not entering the labor force?

2. What percent of the public secondary vocational-technical graduates by program were unemployed?

3. What occupations did the public secondary vocational-technical graduates by program enter?

An effort was also made to determine if there were any differences among graduates by instructional program for the Philadelphia LMA, Pittsburgh LMA and the rest of the State

REVIEW OF THE LITERATURE

Recognizing that it is crucial to a total supply/demand model to know what resources are available for meeting manpower requirements, the Oregon Department of Employment initiated a research study to determine methods for forecasting occupational supply from all sources (6). The methodologies presented as a result of this research are excellent. However, because the basic interest was in determining the general supply no methodology was presented which would ascertain the supply for a particular occupation. Subsequently, the U.S. Department of Labor, Bureau of Labor Statistics did prepare a detailed methodology for projecting labor supply for a specific occupation (10). This made it possible to develop a supply/demand model for projecting growth of individual occupations and the anticipated supply. This methodology recognized that a certain percent of the potential graduating supply would not enter the labor force for one reason or another and persons do not necessarily enter the occupation for which they have been trained.

In developing a supply/demand model for projecting manpower needs (demand) and available resources (supply), a basic assumption made in developing a supply/demand model in Pennsylvania, was that a graduate from a training institution entered the occupation for which he or she was trained (4, 7). In all fairness, these limitations were recognized and for this reason, it was recommended that the information be used with caution and other available information be used in conjunction

whenever possible. Similar work has also been done in Oklahoma (2, 8). However, before matching the supply with the occupational demand, the supply was adjusted to conform with past experience as to what percent entered the labor force. The actual interfacing of supply and demand was then accomplished on the basis of follow-up information of private school graduates and on the cluster concept. Based on a detailed review of the interface as a result of the cluster concept, it would appear that a primary source was the Office of Education publication entitled, Vocational Education and Occupations (9). However, in using the cluster concept for interfacing supply and demand, a basic assumption was that graduates do enter highly related occupations to their field of study. Findings by Max Eninger, however, indicate that this is not necessarily true (3). Further, there appears to be variation within general instructional programs (i.e.--agriculture ed., trade and industrial, etc.).

Recognizing that at present, there is only limited information available as to what occupations are entered by graduates from particular instructional programs, it was decided that three Instructional Program/Occupation Matrices be developed. It was felt that in developing these matrices, central features should be built in so that it could be determined what percent of the public secondary vocational-technical programs graduates do not enter the labor force.

DEFINITION OF TERMS

In general, this report has utilized standard terminology. However, in some instances, terms which have unique meanings in the body of this report have been used. The following section defines, for the purpose of this report, those terms.

HORIZONTAL CLUSTER--The term, "Horizontal Cluster," is used in conjunction with the Instructional Program/Occupation Matrix to define a situation where graduates of several, or perhaps many, instructional programs are employed in a common occupation.

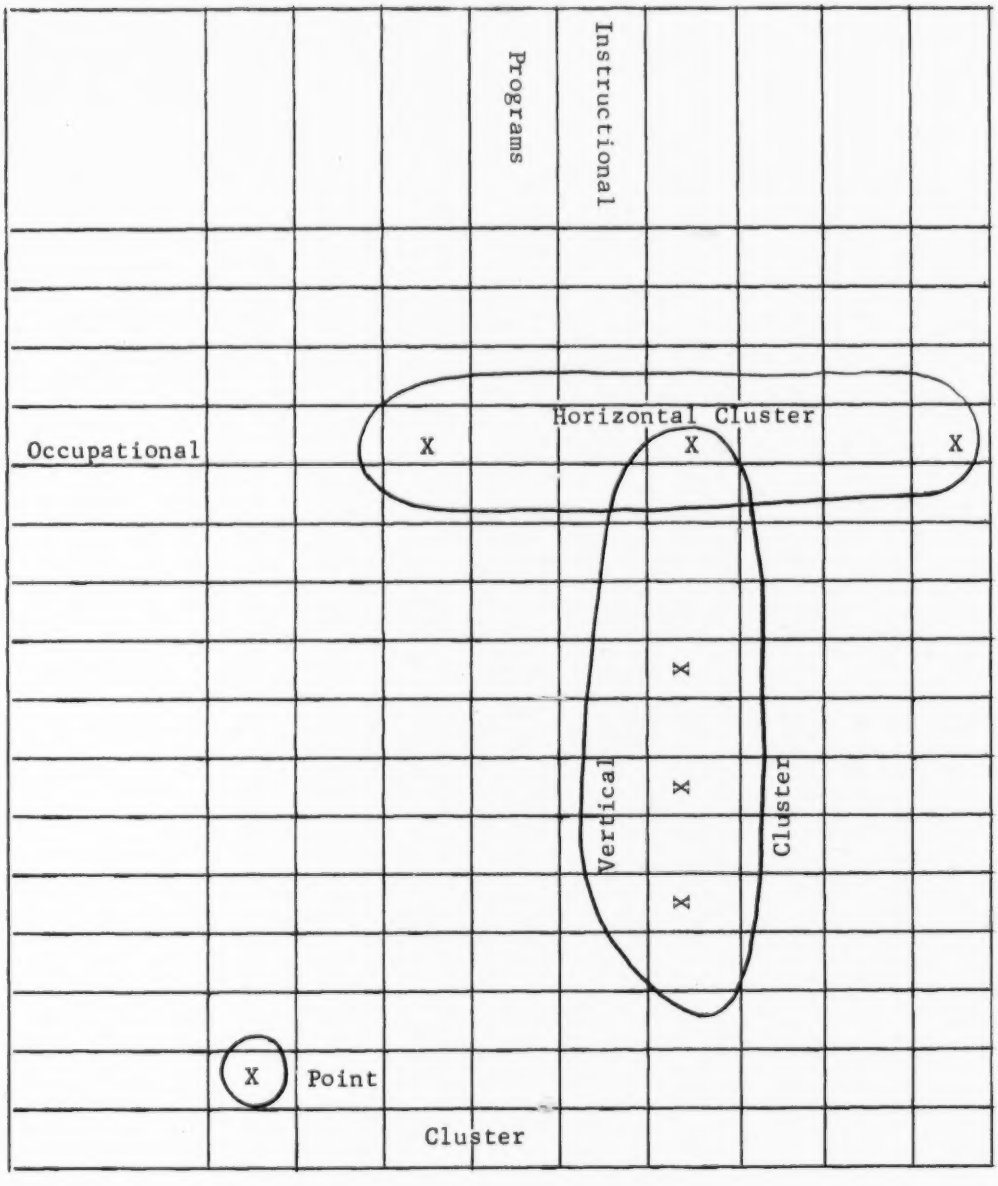
VERTICAL CLUSTER--Whereas "Horizontal Clustering" defines a situation where several instructional programs feed into a common occupation, "Vertical Cluster" defines a situation where graduates of one instructional program are employed in several, or perhaps many, different occupations.

POINT CLUSTER--The term "Point Cluster" defines a lack of clustering and would therefore describe a situation where the graduates of a particular program are employed in only one occupation. (Note: Figure 1 is a hypothetical presentation of Horizontal, Vertical, and Point Clusters).

GRAVITATIONAL OCCUPATIONS--Occupations that have lower salary ranges, career possibilities and prestige than those occupations for which a person has trained.

FIGURE 1

CLUSTERS AS DISPLAYED BY THE INSTRUCTIONAL PROGRAM/OCCUPATION MATRIX



LABOR FORCE PARTICIPATION RATE--That percentage of the population between the ages of 16 and 65 who are employed or are actively seeking employment. This does not include thos who are in the military, full-time students, the physically disabled, or those who for other reasons are not seeking or are not capable of seeking full-time employment.

METHODOLOGY

The post-high school distribution of the graduates of Pennsylvania's public secondary level vocational education programs has been examined in this model by the construction and analysis of the "Instructional Program/Occupation Matrix" (I/O Matrix). The raw data input to this matrix was obtained from the High School Class of 1970 "Follow-Up Career Survey" questionnaires (Appendix E).

The first step in examining the raw data was to sort the data by course codes obtained from the survey form (see Appendix E). A total of 164 program offerings were catalogued as being in vocational education schools in Pennsylvania (see Appendix A). These 164 programs were again sorted according to the three major labor market areas of Pennsylvania:

1. Pittsburgh Labor Market--which includes,
    a. Allegheny County
    b. Beaver County
    c. Washington County
    d. Westmoreland County
2. Philadelphia Labor Market--which includes,
    a. Bucks County
    b. Chester County
    c. Delaware County
    d. Montgomery County
    e. Philadelphia County
3. The remainder of Pennsylvania

Originally, I/O Matrices for the 47 LMA's and Pennsylvania were to have been developed, but due to the fact that in some of the smaller LMA's the total number of graduates by program was insufficient for developing an I/O Matrix, only the above three were developed.

The rationale for the three matrices is further based on population distribution which indicates the following:

	NUMBER	PERCENT
TOTAL POPULATION (1970)	11,793,909	100.00
PHILADELPHIA LMA	4,817,914	40.85
PITTSBURGH LMA	2,401,245	20.36
REST OF THE STATE	4,574,750	38.79

From this information, it can readily be seen that an effort to breakout the 45 LMA's from the rest of the state would result in small numbers and any Matrices developed would not be significant. For this reason, the supply from the 45 LMA's will be evaluated in terms of the remainder of the state I/O Matrix in the actual Supply/Demand Model for Vocational Education Planners.

The data obtained were then recorded on the matrix work sheet (Appendix F), where the x ordinate was Instructional Program and Occupation was the basis for entry on the y axis. In all cases, the Occupation was determined by comparing entry 9 on the questionnaire to the Dictionary of Occupational Title listings. An entry was made at the point of intersection using a color code corresponding to each of the three LMA's.

When all of the questionnaires had been entered on the matrix work sheets, the rows were totaled separately. Each occupation entry

for a column was then divided by the total for the column. The resulting ratios are listed on the final matrix form (Appendix J).

Appendix D lists the student entries (line 9 of the questionnaire) to the occupational classifications of the matrix.

The second area of study was concerned with the graduates' present status other than full-time employment. The data were accumulated by, once again, sorting the raw data by course code as in the first proceedure, but then sorting further by present individual status (section B of survey form, Appendix E).

The rationale used to accomplish this, as some cases were not readily definable, was as follows:

1. References to part-time employment were ignored in all cases, especially in favor of indications made of school or college part-time or full-time, and in favor of full-time employment.

2. Any type of school or college was recorded.

3. Unemployed, looking for work was ignored in favor of attendance in school or college full-time.

4. The category "military" did not include those graduates in the military reserves. This was determined by indications of full-time or part-time employment or full or part-time school.

5. The category of "other" was determined to mean:

   a. Graduate left the labor market to move to a different state or country.

   b. Graduate is handicapped or otherwise unable to enter the labor market because of medical reasons.

   c. Graduate did not enter the labor market because of family illness or other difficulty.

   d. Graduate (female) did not enter the labor market because of marriage and/or pregnancy.

In developing the Instructional Program/Occupation Matrix, the original listing of 164 coded instructional programs (Appendix A) was reduced to 138 (see Appendix B) on the basis of similar training received. Upon completing the matrix, it was found that there were 43 programs from which there were no student responses and/or were not offered in the schools. Also, for 47 programs, there were less than fifty responses. For these reasons, the instructional programs were reduced to 46 for the final matrix with those programs with less than fifty responses being included under "other" (see Appendix C).

LIMITATIONS

The study centered around analysing the results of the follow-up survey of the 1970 public secondary vocational-technical graduates which was conducted by the Educational Systems Research Institute. Therefore, the limitations usually found for surveys are applicable for this study. For this reason, any interpretation of the findings must bear in mind the percent returns. However, the Educational Systems Research Institute did study a sample of the non-respondants. The results of that study indicated that there was no significant difference between the non-respondants and the respondants.

Also, the survey forms were mailed out on October 12, 1970. A second survey form was sent out to non-respondants on or about November 9, 1970 (5). Thus, it can be seen that the students were sampled about four to five months after graduation. Taking into consideration that many students may not have started looking for work until the end of the summer season, the survey forms may have been sent too soon. As a result, the unemployment rate of graduates by program would not necessarily present a realistic view of the vocational-technical graduates' ability to find employment.

In developing the Instructional Program/Occupation Matrices, no adjustments were made to take into consideration migration of the graduates out of their area of origin. Thus, if a student graduated from a particular area, his or her occupation was recorded for that area

regardless of present address. This was done so that it could be determined to what extent graduates from different areas by instructional program were able to get jobs related to their field of study.

As a final note, because the follow-up survey was taken soon after graduation, the findings must be viewed in terms of first entry occupation. Considering that many companies adhere rather strictly to seniority rights and other union regulations related to new employees entering a company, it is often necessary for a newly hired worker to start at a lower level job. Only later, after some seniority is established can that recently hired entrant "bump" for a position more in keeping with his education and training. For this reason, the first entry occupation may not present a fair view of the vocational-technical graduates ability to eventually get jobs directly related to his field of training.

FINDINGS

The findings of this study are reported in terms of the questions posed previously in the Statement of the Problem. For each question, separate tables have been prepared for the three areas of Philadelphia, Pittsburgh and the rest of the State. However, before presenting the findings, information is presented which will provide background information deemed necessary for interpreting the findings.

In combining instructional programs as described in the methodology, it was believed that the combined programs had a number of communalities. No attempt was made to delineate local variation in curriculum content, teaching style, or in the quality of training received. Also, in presenting the information in an aggregated manner for the three areas of concern, individual program differences are of necessity blurred. Should a local vocational education planner seek to use the findings presented, it would be necessary for him to take into consideration aspects unique to his local area. Thus, for instance, if a local area has a cooperative education program in a particular instructional program, the labor force participation rate for the graduates could be higher than that presented and conceivably the unemployment rate would drop to less than one percent. Other changes could, of course, also occur.

Although the findings will be used to determine the potential supply for an occupation in the future, nothing can as yet be said

concerning the stability of the Instructional Program/Occupation Matrix over time. This will be ascertained in subsequent studies. However, the findings can be used as an historical perspective indicating what happened to the various graduates from the different instructional programs.

Any inspection of the labor force participation rate for the 46 instructional programs must be viewed in terms of the availability of post-secondary and college institutions in the area. Also, preliminary findings not published here indicate that the labor force participation rate for a given area is influenced by economic variables such as weekly wages and salaries paid and the average rate of unemployment for an area.

Also, in developing the Instructional Program/Occupation Matrices students' responses were recorded regardless of present place of residence. Thus, if a graduate from the Pittsburgh LMA recorded that he worked as a carpenter's helper in a different city in Pennsylvania or a different state from the one he went to school, the recording was still made in terms of the area of origin.

Finally, no attempt was made to prepare a cluster concept as a result of the findings. In themselves, the findings present what might be termed a real cluster of occupations for instructional programs. Should a curriculum planner be interested in aligning a present curriculum in terms of a cluster concept, the findings can give valuable information on what is or has occurred as a result of past curricula offerings.

A. LABOR FORCE PARTICIPATION AND NON-PARTICIPATION

The findings for the three areas of concern indicate that the major reasons for not participating in the labor force were as follows:

1. not looking for work
2. attending full-time school
3. attending part-time school
4. attending full-time college
5. attending part-time college
6. enlisted in the military
7. other (disabled, married, etc. . . .)

In reviewing Table I, it can be seen that with the exception of instructional programs in which mostly women are found, the percent not looking for work is less than five percent in all three areas with minor exceptions.

The percent continuing their education (full-time school and full-time college) is highest for programs in the technical education fields. However, the percentages are relatively high for the other programs, indicating that although the public secondary vocational-technical programs are basically geared to preparing students for entry into the labor market, a significant percent of the students are continuing their education. This would appear to negate assertions that vocational education "tracks" students into jobs for which only a high school diploma is required. On the contrary, these findings indicate that although the preparation is in terms of an occupation or an occupational cluster, the vocational program graduates attain occupational training on a wide variety of skill levels in terms of education.

With the exception of the programs in which women are predominantly found, the percent of the graduates entering the military appears

quite high for the instructional programs detailed. In all three areas, the graduates from the trade and industrial areas have the greatest percent entering the military. The high rate of enlistment of vocational graduates could have been due to the rather intensive military recruitment during that period. Also, the general unemployment rate in Pennsylvania during the second and third quarters of 1970 was relatively high. This may have induced vocational-technical program graduates to enlist in the Armed Forces rather than accept the alternative of unemployment.

It would appear from this study that the major reasons given by the vocational-technical graduates for not participating in the labor force were: 1) attending school or college full-time, and 2) enlisted in the military. Thus, with the exception of the female graduates the categories of not looking for work and other appear to be minor factor.

As can be seen in Table I, the actual percent of the graduates participating in the labor force ranges from a high of 100 percent to a low of about eight percent. Interestingly, the graduates from the technical programs, with the exception of the architectural technology graduates, have the lowest participation rates on the average. The highest participation rates are found for graduates from the trade and industrial programs and the business/office programs. The median labor force participation ratio for the three areas are:

Area	Rate
Rest of State	.625
Philadelphia LMA	.640
Pittsburgh LMA	.564

Thus, in general, it can be said that about 63 and 64 percent, respectively of the vocational graduates from the rest of the State and the Philadelphia LMA entered the labor force upon graduation but only about 56 percent did so for the Pittsburgh LMA. The low participation rates for the Pittsburgh LMA graduates could be due to the fact that there was a high youth unemployment rate in the area at that time.

TABLE I

REST OF STATE		NOT LOOKING
0.033	COMMER & GRAPHIC ARTS	
0.057	COSMETOLOGY	
0.011	MACHINE PROGRAMS	
0.030	MASONRY/BRICKLAYER	
0.026	PRINTING PROGRAMS	
0.015	WELDING	
0.027	T & I, OTHER	
0.050	CHEMICAL TECH	
0.035	SCIENTIFIC DATA PROC	
0.161	HEALTH ASSISTANT	
0.015	AG PROD/GENERAL AG	
0.048	ORNAMENTAL HORTICUL	
0.049	FOOD SERVICES	
0.083	VOC HOME ECON	
0.093	GAINFUL HOME EC, OTHER	
0.083	ACCOUNTING/BOOKKEEPING	
0.019	CLERK-TYPIST	
0.036	GENERAL CLERICAL	
0.034	STENO/SECRETARIAL	
0.027	BUS/OFFICE, OTHER	
0.057	APPAREL, MERCH & RETAIL	
0.059	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, Information is not included.

TABLE I--continued

PHILADELPHIA		NOT LOOKING
0.013	ELECTRICAL PROGRAMS	
0.013	WOODWORKING & CARPEN	
0.053	COSMETOLOGY	
0.059	WELDING	
0.020	T & I, OTHER	
0.045	COMPUTER PROGRAM	
0.023	SCIENTIFIC DATA PROC	
0.100	HEALTH ASSISTANT	
0.061	FOOD SERVICES	
0.150	VOC HOME ECON	
0.017	ACCOUNTING/BOOKKEEPING	
0.039	CLERK-TYPIST	
0.021	GENERAL CLERICAL	
0.023	BUS/OFFICE, OTHER	
0.167	FOOD DISTRIBUTION	
0.026	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PITTSBURGH		NOT LOOKING
0.056	AUTO BODY & FENDER	
0.034	COSMETOLOGY	
0.021	MACHINE PROGRAMS	
0.037	T & I, OTHER	
0.048	SCIENTIFIC DATA PROC	
0.053	HEALTH, OTHER	
0.250	ORNAMENTAL HORTICUL	
0.047	CHILD CARE	
0.030	FOOD SERVICES	
0.031	VOC HOME ECON	
0.026	GAINFUL HOME EC, OTHER	
0.043	ACCOUNTING/BOOKKEEPING	
0.031	CLERK-TYPIST	
0.021	GENERAL CLERICAL	
0.078	BUS/OFFICE, OTHER	
0.050	FOOD DISTRIBUTION	
0.040	APPAREL, MERCH & RETAIL	
0.048	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

REST OF STATE	FULL-TIME SCHOOL
0.126	ELECTRICAL PROGRAMS
0.012	AUTO BODY & FENDER
0.054	AUTO & DIESEL MECH
0.023	BUILDING TRADES
0.037	WOODWORKING & CARPEN
0.066	COMMER & GRAPHIC ARTS
0.186	COSMETOLOGY
0.127	DRAFTING
0.045	MACHINE PROGRAMS
0.103	PRINTING PROGRAMS
0.154	SHEET METAL
0.015	WELDING
0.041	T & I, OTHER
0.150	CHEMICAL TECH
0.077	CIVIL TECH
0.138	ELECTRICAL TECH
0.111	MECHANICAL TECH
0.035	SCIENTIFIC DATA PROC
0.287	HEALTH ASSISTANT
0.019	AG PROD/GENERAL AG
0.091	AG MECHANICS
0.065	AGRICULTURE, OTHER
0.152	CLOTHING SERVICES
0.082	FOOD SERVICES
0.158	VOC HOME ECON
0.167	GAINFUL HOME EC, OTHER
0.055	ACCOUNTING/BOOKKEEPING
0.019	CLERK-TYPIST
0.100	DATA PROCESSING
0.130	GENERAL CLERICAL
0.060	STENO/SECRETARIAL
0.154	FOOD DISTRIBUTION
0.057	APPAREL, MERCH & RETAIL
0.029	DISTRIB EDUC, OTHER

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PHILADELPHIA	FULL-TIME SCHOOL
0.139	ELECTRICAL PROGRAMS
0.034	AUTO BODY & FENDER
0.143	AUTO & DIESEL MECH
0.078	WOODWORKING & CARPEN
0.091	COMMER & GRAPHIC ARTS
0.158	COSMETOLOGY
0.109	DRAFTING
0.132	MACHINE PROGRAMS
0.032	PRINTING PROGRAMS
0.250	SHEET METAL
0.060	T & I, OTHER
0.063	CHEMICAL TECH
0.123	ELECTRICAL TECH
0.125	MECHANICAL TECH
0.045	SCIENTIFIC DATA PROC
0.050	HEALTH ASSISTANT
0.118	HEALTH, OTHER
0.100	ORNAMENTAL HORTICUL
0.167	CHILD CARE
0.143	CLOTHING SERVICES
0.091	FOOD SERVICES
0.050	VOC HOME ECON
0.067	GAINFUL HOME EC, OTHER
0.068	ACCOUNTING/BOOKKEEPING
0.039	CLERK-TYPIST
0.095	DATA PROCESSING
0.091	GENERAL CLERICAL
0.037	STENO/SECRETARIAL
0.047	BUS/OFFICE, OTHER
0.333	FOOD DISTRIBUTION
0.052	DISTRIB EDUC, OTHER

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PITTSBURGH	FULL-TIME SCHOOL
0.353	AIRCOND & REFRIG
0.295	ELECTRICAL PROGRAMS
0.056	AUTO BODY & FENDER
0.071	AUTO & DIESEL MECH
0.060	WOODWORKING & CARPEN
0.167	COMMER & GRAPHIC ARTS
0.091	COSMETOLOGY
0.052	DRAFTING
0.094	MACHINE PROGRAMS
0.103	PRINTING PROGRAMS
0.222	SHEET METAL
0.045	WELDING
0.148	T & I, OTHER
0.194	AUTO & DIESEL TECH
0.125	CIVIL TECH
0.014	COMPUTER PROGRAM
0.154	ELECTRICAL TECH
0.200	MECHANICAL TECH
0.061	TECHNICAL, OTHER
0.038	AG PROD/GENERAL AG
0.160	CHILD CARE
0.152	CLOTHING SERVICES
0.210	FOOD SERVICES
0.169	VOC HOME ECON
0.092	GAINFUL HOME EC, OTHER
0.158	ACCOUNTING/BOOKKEEPING
0.061	CLERK-TYPIST
0.088	DATA PROCESSING
0.118	GENERAL CLERICAL
0.089	STENO/SECRETARIAL
0.118	BUS/OFFICE, OTHER
0.050	FOOD DISTRIBUTION
0.069	APPAREL, MERCH & RETAIL
0.062	DISTRIB EDUC, OTHER

If percent for program was less than 0.001, information is not included.

TABLE I--continued

REST OF STATE		PART-TIME SCHOOL
0.053	ELECTRICAL PROGRAMS	
0.059	AUTO BODY & FENDER	
0.040	AUTO & DIESEL MECH	
0.037	WOODWORKING & CARPEN	
0.033	COMMER & GRAPHIC ARTS	
0.057	COSMETOLOGY	
0.018	DRAFTING	
0.030	MASONRY/BRICKLAYER	
0.026	PRINTING PROGRAMS	
0.014	T & I, OTHER	
0.050	COMPUTER PROGRAM	
0.016	ELECTRICAL TECH	
0.485	MECHANICAL TECH	
0.059	SCIENTIFIC DATA PROC	
0.077	TECHNICAL, OTHER	
0.011	HEALTH ASSISTANT	
0.048	ORNAMENTAL HORTICUL	
0.065	AGRICULTURE, OTHER	
0.061	CLOTHING SERVICES	
0.033	FOOD SERVICES	
0.019	GAINFUL HOME EC, OTHER	
0.018	ACCOUNTING/BOOKKEEPING	
0.038	CLERK-TYPIST	
0.140	DATA PROCESSING	
0.026	STENO/SECRETARIAL	
0.027	BUS/OFFICE, OTHER	
0.029	APPAREL, MERCH & RETAIL	
0.022	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PHILADELPHIA	PART-TIME SCHOOL
0.222	AIRCOND & REFRIG
0.051	ELECTRICAL PROGRAMS
0.034	AUTO BODY & FENDER
0.014	AUTO & DIESEL MECH
0.125	BUILDING TRADES
0.065	WOODWORKING & CARPEN
0.106	COMMER & GRAPHIC ARTS
0.044	COSMETOLOGY
0.043	DRAFTING
0.029	MACHINE PROGRAMS
0.167	MASONRY/BRICKLAYER
0.133	PLUMBING
0.059	WELDING
0.040	T & I, OTHER
0.038	ELECTRICAL TECH
0.042	MECHANICAL TECH
0.068	SCIENTIFIC DATA PROC
0.050	HEALTH ASSISTANT
0.059	HEALTH, OTHER
0.150	ORNAMENTAL HORTICUL
0.050	VOC HOME ECON
0.133	GAINFUL HOME EC, OTHER
0.076	ACCOUNTING/BOOKKEEPING
0.087	CLERK-TYPIST
0.095	DATA PROCESSING
0.091	GENERAL CLERICAL
0.020	STENO/SECRETARIAL
0.093	BUS/OFFICE, OTHER
0.033	DISTRIB EDUC, OTHER

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PITTSBURGH	PART-TIME SCHOOL
0.059	AIRCOND & REFRIG
0.034	ELECTRICAL PROGRAMS
0.048	AUTO & DIESEL MECH
0.012	WOODWORKING & CARPEN
0.111	COMMER & GRAPHIC ARTS
0.080	COSMETOLOGY
0.021	DRAFTING
0.083	MACHINE PROGRAMS
0.103	PRINTING PROGRAMS
0.045	WELDING
0.037	T & I, OTHER
0.032	AUTO & DIESEL TECH
0.025	CIVIL TECH
0.029	COMPUTER PROGRAM
0.033	ELECTRICAL TECH
0.060	MECHANICAL TECH
0.061	TECHNICAL, OTHER
0.231	AG PROD/GENERAL AG
0.057	CHILD CARE
0.020	FOOD SERVICES
0.031	VOC HOME ECON
0.013	GAINFUL HOME EC, OTHER
0.022	ACCOUNTING/BOOKKEEPING
0.071	CLERK-TYPIST
0.069	GENERAL CLERICAL
0.032	STENO/SECRETARIAL
0.020	BUS/OFFICE, OTHER
0.050	FOOD DISTRIBUTION
0.050	APPAREL, MERCH & RETAIL
0.062	DISTRIB EDUC, OTHER

If percent for program was less than 0.001, information is not included.

TABLE I--continued

REST OF STATE		FULL-TIME COLLEGE
0.113	ELECTRICAL PROGRAMS	
0.012	AUTO BODY & FENDER	
0.020	AUTO & DIESEL MECH	
0.070	BUILDING TRADES	
0.074	WOODWORKING & CARPEN	
0.131	COMMER & GRAPHIC ARTS	
0.014	COSMETOLOGY	
0.410	DRAFTING	
0.067	MACHINE PROGRAMS	
0.051	PRINTING PROGRAMS	
0.015	WELDING	
0.014	T & I, OTHER	
0.600	CHEMICAL TECH	
0.692	CIVIL TECH	
0.525	COMPUTER PROGRAM	
0.333	ELECTRICAL TECH	
0.010	MECHANICAL TECH	
0.176	SCIENTIFIC DATA PROC	
0.423	TECHNICAL, OTHER	
0.034	HEALTH ASSISTANT	
0.112	AG PROD/GENERAL AG	
0.318	AG MECHANICS	
0.190	ORNAMENTAL HORTICUL	
0.258	AGRICULTURE, OTHER	
0.600	CHILD CARE	
0.303	CLOTHING SERVICES	
0.131	FOOD SERVICES	
0.237	VOC HOME ECON	
0.185	GAINFUL HOME EC, OTHER	
0.138	ACCOUNTING/BOOKKEEPING	
0.019	CLERK-TYPIST	
0.140	DATA PROCESSING	
0.124	GENERAL CLERICAL	
0.082	STENO/SECRETARIAL	
0.216	BUS/OFFICE, OTHER	
0.154	FOOD DISTRIBUTION	
0.114	APPAREL, MERCH & RETAIL	
0.088	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PHILADELPHIA	FULL-TIME COLLEGE
0.051	ELECTRICAL PROGRAMS
0.069	AUTO BODY & FENDER
0.029	AUTO & DIESEL MECH
0.125	BUILDING TRADES
0.052	WOODWORKING & CARPEN
0.152	COMMER & GRAPHIC ARTS
0.044	COSMETOLOGY
0.152	DRAFTING
0.032	PRINTING PROGRAMS
0.125	SHEET METAL
0.080	T & I, OTHER
0.500	CHEMICAL TECH
0.273	COMPUTER PROGRAM
0.387	ELECTRICAL TECH
0.458	MECHANICAL TECH
0.136	SCIENTIFIC DATA PROC
0.385	TECHNICAL, OTHER
0.100	HEALTH ASSISTANT
0.088	HEALTH, OTHER
0.111	AG PROD/GENERAL AG
0.200	ORNAMENTAL HORTICUL
0.500	AGRICULTURE, OTHER
0.417	CHILD CARE
0.286	CLOTHING SERVICES
0.152	FOOD SERVICES
0.133	GAINFUL HOME EC, OTHER
0.195	ACCOUNTING/BOOKKEEPING
0.049	CLERK-TYPIST
0.095	DATA PROCESSING
0.054	GENERAL CLERICAL
0.114	STENO/SECRETARIAL
0.140	BUS/OFFICE, OTHER
0.167	APPAREL, MERCH & RETAIL
0.059	DISTRIB EDUC, OTHER

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PITTSBURGH	FULL-TIME COLLEGE
0.059	AIRCOND & REFRIG
0.102	ELECTRICAL PROGRAMS
0.036	AUTO & DIESEL MECH
0.143	BUILDING TRADES
0.119	WOODWORKING & CARPEN
0.139	COMMER & GRAPHIC ARTS
0.068	COSMETOLOGY
0.302	DRAFTING
0.063	MACHINE PROGRAMS
0.172	PRINTING PROGRAMS
0.045	WELDING
0.111	T & I, OTHER
0.032	AUTO & DIESEL TECH
0.250	CHEMICAL TECH
0.200	CIVIL TECH
0.333	COMPUTER PROGRAM
0.301	ELECTRICAL TECH
0.440	MECHANICAL TECH
0.286	SCIENTIFIC DATA PROC
0.408	TECHNICAL, OTHER
0.333	HEALTH ASSISTANT
0.158	HEALTH, OTHER
0.077	AG PROD/GENERAL AG
0.250	ORNAMENTAL HORTICUL
0.385	AGRICULTURE, OTHER
0.283	CHILD CARE
0.609	CLOTHING SERVICES
0.310	FOOD SERVICES
0.154	VOC HOME ECON
0.421	GAINFUL HOME EC, OTHER
0.173	ACCOUNTING/BOOKKEEPING
0.112	CLERK-TYPIST
0.147	DATA PROCESSING
0.153	GENERAL CLERICAL
0.102	STENO/SECRETARIAL
0.118	BUS/OFFICE, OTHER
0.150	FOOD DISTRIBUTION
0.079	APPAREL, MERCH & RETAIL
0.105	DISTRIB EDUC, OTHER

If percent for program was less than 0.001, information is not included.

TABLE I--continued

REST OF STATE		PART-TIME COLLEGE
0.047	BUILDING TRADES	
0.016	COMMER & GRAPHIC ARTS	
0.018	DRAFTING	
0.039	MACHINE PROGRAMS	
0.015	WELDING	
0.154	CIVIL TECH	
0.021	ELECTRICAL TECH	
0.081	MECHANICAL TECH	
0.035	SCIENTIFIC DATA PROC	
0.077	TECHNICAL, OTHER	
0.011	HEALTH ASSISTANT	
0.032	AGRICULTURE, OTHER	
0.100	CHILD CARE	
0.055	ACCOUNTING/BOOKKEEPING	
0.060	DATA PROCESSING	
0.011	STENO/SECRETARIAL	
0.086	APPAREL, MERCH & RETAIL	
0.044	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PHILADELPHIA		PART-TIME COLLEGE
0.013	WOODWORKING & CARPEN	
0.030	COMMER & GRAPHIC ARTS	
0.065	DRAFTING	
0.040	T & I, OTHER	
0.045	COMPUTER PROGRAM	
0.038	ELECTRICAL TECH	
0.045	SCIENTIFIC DATA PROC	
0.050	HEALTH ASSISTANT	
0.059	HEALTH, OTHER	
0.034	ACCOUNTING/BOOKKEEPING	
0.016	STENO/SECRETARIAL	
0.047	BUS/OFFICE, OTHER	
0.026	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PITTSBURGH		PART-TIME COLLEGE
0.034	ELECTRICAL PROGRAMS	
0.012	AUTO & DIESEL MECH	
0.031	DRAFTING	
0.010	MACHINE PROGRAMS	
0.065	AUTO & DIESEL TECH	
0.075	CIVIL TECH	
0.029	COMPUTER PROGRAM	
0.016	ELECTRICAL TECH	
0.020	MECHANICAL TECH	
0.095	SCIENTIFIC DATA PROC	
0.020	TECHNICAL, OTHER	
0.167	HEALTH ASSISTANT	
0.269	AG PROD/GENERAL AG	
0.019	CHILD CARE	
0.015	VOC HOME ECON	
0.013	GAINFUL HOME EC, OTHER	
0.022	ACCOUNTING/BOOKKEEPING	
0.020	CLERK-TYPIST	
0.089	APPAREL, MERCH & RETAIL	
0.019	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

REST OF STATE		MILITARY
0.250	AIRCOND & REFRIG	
0.172	ELECTRICAL PROGRAMS	
0.224	AUTO BODY & FENDER	
0.139	AUTO & DIESEL MECH	
0.233	BUILDING TRADES	
0.153	WOODWORKING & CARPEN	
0.131	COMMER & GRAPHIC ARTS	
0.133	DRAFTING	
0.196	MACHINE PROGRAMS	
0.152	MASONRY/BRICKLAYER	
0.174	PLUMBING	
0.205	PRINTING PROGRAMS	
0.231	SHEET METAL	
0.308	WELDING	
0.068	T & I, OTHER	
0.050	CHEMICAL TECH	
0.050	COMPUTER PROGRAM	
0.153	ELECTRICAL TECH	
0.071	SCIENTIFIC DATA PROC	
0.192	TECHNICAL, OTHER	
0.046	HEALTH ASSISTANT	
0.170	AG PROD/GENERAL AG	
0.136	AG MECHANICS	
0.161	AGRICULTURE, OTHER	
0.200	CHILD CARE	
0.082	FOOD SERVICES	
0.018	VOC HOME ECON	
0.028	ACCOUNTING/BOOKKEEPING	
0.019	CLERK-TYPIST	
0.024	GENERAL CLERICAL	
0.135	BUS/OFFICE, OTHER	
0.059	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PHILADELPHIA		MILITARY
0.111	AIRCOND & REFRIG	
0.025	ELECTRICAL PROGRAMS	
0.138	AUTO BODY & FENDER	
0.186	AUTO & DIESEL MECH	
0.375	BUILDING TRADES	
0.117	WOODWORKING & CARPEN	
0.065	DRAFTING	
0.147	MACHINE PROGRAMS	
0.133	PLUMBING	
0.161	PRINTING PROGRAMS	
0.250	SHEET METAL	
0.235	WELDING	
0.140	T & I, OTHER	
0.125	CHEMICAL TECH	
0.136	COMPUTER PROGRAM	
0.085	ELECTRICAL TECH	
0.083	MECHANICAL TECH	
0.045	SCIENTIFIC DATA PROC	
0.500	AG MECHANICS	
0.050	ORNAMENTAL HORTICUL	
0.083	CHILD CARE	
0.121	FOOD SERVICES	
0.051	ACCOUNTING/BOOKKEEPING	
0.019	CLERK-TYPIST	
0.116	BUS/OFFICE, OTHER	
0.052	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PITTSBURGH		MILITARY
0.125	ELECTRICAL PROGRAMS	
0.167	AUTO BODY & FENDER	
0.131	AUTO & DIESEL MECH	
0.286	BUILDING TRADES	
0.036	WOODWORKING & CARPEN	
0.111	COMMER & GRAPHIC ARTS	
0.229	DRAFTING	
0.167	MACHINE PROGRAMS	
0.429	MASONRY/BRICKLAYER	
0.103	PRINTING PROGRAMS	
0.182	WELDING	
0.111	T & I, OTHER	
0.290	AUTO & DIESEL TECH	
0.125	CHEMICAL TECH	
0.100	CIVIL TECH	
0.029	COMPUTER PROGRAM	
0.138	ELECTRICAL TECH	
0.120	MECHANICAL TECH	
0.061	TECHNICAL, OTHER	
0.105	HEALTH, OTHER	
0.077	AGRICULTURE, OTHER	
0.070	FOOD SERVICES	
0.062	VOC HOME ECON	
0.029	ACCOUNTING/BOOKKEEPING	
0.020	CLERK-TYPIST	
0.014	GENERAL CLERICAL	
0.012	STENO/SECRETARIAL	
0.039	BUS/OFFICE, OTHER	
0.050	FOOD DISTRIBUTION	
0.020	APPAREL, MERCH & RETAIL	
0.053	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

REST OF STATE		OTHER
0.015	WELDING	
0.011	ELECTRICAL TECH	
0.048	ORNAMENTAL HORTICUL	
0.018	VOC HOME ECON	
0.028	ACCOUNTING/BOOKKEEPING	
0.018	GENERAL CLERICAL	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PHILADELPHIA		OTHER
0.013	WOODWORKING & CARPEN	
0.032	PRINTING PROGRAMS	
0.020	T & I, OTHER	
0.045	COMPUTER PROGRAM	
0.017	ACCOUNTING/BOOKKEEPING	
0.019	CLERK-TYPIST	
0.012	GENERAL CLERICAL	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

PITTSBURGH		OTHER
0.179	WOODWORKING & CARPEN	
0.019	FOOD SERVICES	
0.015	VOC HOME ECON	
0.014	ACCOUNTING/BOOKKEEPING	

If percent for program was less than 0.001, information is not included.

TABLE I--continued

REST OF STATE		PARTICIPATION RATE
0.750	AIRCOND & REFRIG	
0.530	ELECTRICAL PROGRAMS	
0.694	AUTO BODY & FENDER	
0.743	AUTO & DIESEL MECH	
0.628	BUILDING TRADES	
0.681	WOODWORKING & CARPEN	
0.590	COMMER & GRAPHIC ARTS	
0.686	COSMETOLOGY	
0.295	DRAFTING	
1.000	HEAVY EQUIP CONSTRU	
0.637	MACHINE PROGRAMS	
0.788	MASONRY/BRICKLAYER	
0.826	PLUMBING	
0.590	PRINTING PROGRAMS	
0.615	SHEET METAL	
0.615	WELDING	
0.838	T & I, OTHER	
1.000	ARCHITECTURAL	
1.000	AUTO & DIESEL TECH	
0.150	CHEMICAL TECH	
0.077	CIVIL TECH	
0.375	COMPUTER PROGRAM	
0.328	ELECTRICAL TECH	
0.313	MECHANICAL TECH	
0.588	SCIENTIFLC DATA PROC	
0.231	TECHNICAL, OTHER	
0.448	HEALTH ASSISTANT	
1.000	HEALTH, OTHER	
0.660	AG PROD/GENERAL AG	
0.455	AG MECHANICS	
0.667	ORNAMENTAL HORTICUL	
0.419	AGRICULTURE, OTHER	
0.100	CHILD CARE	
0.485	CLOTHING SERVICES	
0.623	FOOD SERVICES	
0.475	VOC HOME ECON	
0.537	GAINFUL HOME EC, OTHER	
0.596	ACCOUNTING/BOOKKEEPING	
0.887	CLERK-TYPIST	
0.560	DATA PROCESSING	
0.657	GENERAL CLERICAL	
0.776	STENO/SECRETARIAL	
0.595	BUS/OFFICE, OTHER	
0.692	FOOD DISTRIBUTION	
0.657	APPAREL, MERCH & RETAIL	
0.699	DISTRIB EDUC, OTHER	

NOTE: In all cases where the participation rate is 1.000, the useable follow-up returns numbered less than 25. Therefore, the rates may not be representative.

TABLE I--continued

PHILADELPHIA		PARTICIPATION RATE
0.667	AIRCOND & REFRIG	
0.722	ELECTRICAL PROGRAMS	
0.724	AUTO BODY & FENDER	
0.614	AUTO & DIESEL MECH	
0.375	BUILDING TRADES	
0.649	WOODWORKING & CARPEN	
0.621	COMMER & GRAPHIC ARTS	
0.693	COSMETOLOGY	
0.565	DRAFTING	
0.691	MACHINE PROGRAMS	
0.833	MASONRY/BRICKLAYER	
0.733	PLUMBING	
0.742	PRINTING PROGRAMS	
0.375	SHEET METAL	
0.647	WELDING	
0.600	T & I, OTHER	
1.000	ARCHITECTURAL	
1.000	AUTO & DIESEL TECH	
0.313	CHEMICAL TECH	
0.455	COMPUTER PROGRAM	
0.330	ELECTRICAL TECH	
0.292	MECHANICAL TECH	
0.636	SCIENTIFIC DATA PROC	
0.615	TECHNICAL, OTHER	
0.650	HEALTH ASSISTANT	
0.676	HEALTH, OTHER	
0.889	AG PROD/GENERAL AG	
0.500	AG MECHANICS	
0.500	ORNAMENTAL HORTICUL	
0.500	AGRICULTURE, OTHER	
0.333	CHILD CARE	
0.571	CLOTHING SERVICES	
0.576	FOOD SERVICES	
0.750	VOC HOME ECON	
0.667	GAINFUL HOME EC, OTHER	
0.542	ACCOUNTING/BOOKKEEPING	
0.738	CLERK-TYPIST	
0.714	DATA PROCESSING	
0.723	GENERAL CLERICAL	
0.797	STENO/SECRETARIAL	
0.535	BUS/OFFICE, OTHER	
0.500	FOOD DISTRIBUTION	
0.833	APPAREL, MERCH & RETAIL	
0.745	DISTRIB EDUC, OTHER	

NOTE: In all cases where the participation rate is 1.000, the useable follow-up returns numbered less than 25. Therefore, the rates may not be representative.

TABLE I--continued

PITTSBURGH		PARTICIPATION RATE
0.529	AIRCOND & REFRIG	
0.409	ELECTRICAL PROGRAMS	
0.722	AUTO BODY & FENDER	
0.702	AUTO & DIESEL MECH	
0.571	BUILDING TRADES	
0.595	WOODWORKING & CARPEN	
0.472	COMMER & GRAPHIC ARTS	
0.727	COSMETOLOGY	
0.365	DRAFTING	
0.563	MACHINE PROGRAMS	
0.571	MASONRY/BRICKLAYER	
1.000	PLUMBING	
0.517	PRINTING PROGRAMS	
0.778	SHEET METAL	
0.682	WELDING	
0.556	T & I, OTHER	
1.000	ARCHITECTURAL	
0.387	AUTO & DIESEL TECH	
0.625	CHEMICAL TECH	
0.475	CIVIL TECH	
0.565	COMPUTER PROGRAM	
0.358	ELECTRICAL TECH	
0.160	MECHANICAL TECH	
0.571	SCIENTIFIC DATA PROC	
0.388	TECHNICAL, OTHER	
0.500	HEALTH ASSISTANT	
0.684	HEALTH, OTHER	
0.385	AG PROD/GENERAL AG	
1.000	AG MECHANICS	
0.500	ORNAMENTAL HORTICUL	
0.538	AGRICULTURE, OTHER	
0.434	CHILD CARE	
0.239	CLOTHING SERVICES	
0.350	FOOD SERVICES	
0.523	VOC HOME ECON	
0.434	GAINFUL HOME EC, OTHER	
0.540	ACCOUNTING/BOOKKEEPING	
0.684	CLERK-TYPIST	
0.765	DATA PROCESSING	
0.625	GENERAL CLERICAL	
0.739	STENO/SECRETARIAL	
0.627	BUS/OFFICE, OTHER	
0.650	FOOD DISTRIBUTION	
0.653	APPAREL, MERCH & RETAIL	
0.646	DISTRIB EDUC, OTHER	

NOTE: In all cases where the participation rate is 1.000, the useable follow-up returns numbered less than 25. Therefore, the rates may not be representative.

B. UNEMPLOYMENT

As it was previously stated in the limitations, the follow-up survey was conducted about four to five months after graduation. This may have been too soon if we consider that many of the graduates may not have started looking for work until the end of the summer. Therefore, the unemployment rates reported in Table II may not present a realistic view of the vocational-technical graduates' ability to find employment.

Also, the general unemployment rates at that time were as follows:

	Philadelphia LMA	Pittsburgh LMA	Rest of State (Estimated)
September 1970	4.4%	3.2%	3.7%
October 1970	4.5	3.5	3.9
November 1970	4.6	4.3	4.5
December 1970	4.5	4.1	5.0
1970	4.2	3.6	4.0

The unemployment rate for youths 16 to 19 years of age is usually about four times as large as the general unemployment rate. Thus, any one attempting to interpret the findings presented in Table II should bear in mind the above two considerations.

In comparing the various unemployment rates for the three areas, it can be seen that for the rest of the State, there were eight unemployment rates above .20; for the Philadelphia LMA, there were 15 unemployment rates above .20, and for the Pittsburgh LMA there were 29. This appears to indicate that the vocational-technical program graduates in the Pittsburgh LMA have a more difficult time finding suitable

employment even though the general unemployment rate is lower than for the other two areas. Unfortunately, no information has been found that could explain this phenomenon and therefore no explanation are offered.

For the rest of the State, the highest rates of unemployment were experienced by graduates from the gainful home economics programs (child care, clothing services, etc. . . .), and in the distributive education programs (food distribution, apparel, merchandise and retail, etc. . . .). The lowest rates of unemployment were in the trade and industrial programs (electrical programs, auto body and fender, etc. . . .), and in the technical programs (civil technology, computer programming, etc. . . .).

In the Philadelphia LMA, the highest unemployment was also experienced by graduates from the gainful home economics programs. The second highest unemployment rates were experienced by the Business/Office program graduates. The third highest rates of unemployment were experienced by the technical program graduates. This may have been due, in part, to the extensive cut-back in federal defense spending which in Philadelphia, was felt most by persons employed in the engineering and related occupations.

In the Pittsburgh LMA, where the unemployment rates for graduates was the highest of all three areas, the greatest unemployment rates were found for the technical program graduates. As for the Philadelphia LMA, this could have been due to cut-backs in federal defense spending. Basically, the picture for the Pittsburgh LMA graduates, in terms of

unemployed looks rather dismal and further research should be conducted to determine why the unemployment rates for the graduates are so unusually high.

From the findings on the unemployment rates for the 1970 graduates of the vocational-technical programs, it would appear that the graduates are having a difficult time finding employment. This can partially be explained in terms of the economic situation at that time. However, as it was seen for the Pittsburgh LMA graduates other unexplained variables are operating and need to be isolated.

TABLE II

REST OF STATE	UNEMPLOYMENT RATE
0.125	ELECTRICAL PROGRAMS
0.051	AUTO BODY & FENDER
0.040	AUTO & DIESEL MECH
0.111	BUILDING TRADES
0.063	WOODWORKING & CARPEN
0.028	COMMER & GRAPHIC ARTS
0.188	COSMETOLOGY
0.061	DRAFTING
0.096	MACHINE PROGRAMS
0.115	MASONRY/BRICKLAYER
0.087	PRINTING PROGRAMS
0.225	WELDING
0.048	T & I, OTHER
1.000	CIVIL TECH
0.067	COMPUTER PROGRAM
0.016	ELECTRICAL TECH
0.032	MECHANICAL TECH
0.120	SCIENTIFIC DATA PROC
0.179	HEALTH ASSISTANT
0.015	AG PROD/GENERAL AG
0.143	ORNAMENTAL HORTICUL
0.077	AGRICULTURE, OTHER
1.000	CHILD CARE
0.250	CLOTHING SERVICES
0.132	FOOD SERVICES
0.288	VOC HOME ECON
0.241	GAINFUL HOME EC, OTHER
0.185	ACCOUNTING/BOOKKEEPING
0.106	CLERK-TYPIST
0.179	DATA PROCESSING
0.198	GENERAL CLERICAL
0.125	STENO/SECRETARIAL
0.182	BUS/OFFICE, OTHER
0.111	FOOD DISTRIBUTION
0.217	APPAREL, MERCH & RETAIL
0.221	DISTRIB EDUC, OTHER

If percent for program was less than 0.001, information is not included.

TABLE II--continued

PHILADELPHIA		UNEMPLOYMENT RATE
0.167	AIRCOND & REFRIG	
0.123	ELECTRICAL PROGRAMS	
0.095	AUTO BODY & FENDER	
0.186	AUTO & DIESEL MECH	
0.667	BUILDING TRADES	
0.080	WOODWORKING & CARPEN	
0.195	COMMER & GRAPHIC ARTS	
0.228	COSMETOLOGY	
0.192	DRAFTING	
0.128	MACHINE PROGRAMS	
0.217	PRINTING PROGRAMS	
0.091	WELDING	
0.167	T & I, OTHER	
0.200	CHEMICAL TECH	
0.200	COMPUTER PROGRAM	
0.086	ELECTRICAL TECH	
0.286	MECHANICAL TECH	
0.071	SCIENTIFIC DATA PROC	
0.125	TECHNICAL, OTHER	
0.077	HEALTH ASSISTANT	
0.217	HEALTH, OTHER	
0.125	AG PROD/GENERAL AG	
0.200	ORNAMENTAL HORTICUL	
0.250	CHILD CARE	
0.500	CLOTHING SERVICES	
0.053	FOOD SERVICES	
0.600	VOC HOME ECON	
0.200	GAINFUL HOME EC, OTHER	
0.125	ACCOUNTING/BOOKKEEPING	
0.276	CLERK-TYPIST	
0.133	DATA PROCESSING	
0.286	GENERAL CLERICAL	
0.041	STENO/SECRETARIAL	
0.304	BUS/OFFICE, OTHER	
0.100	APPAREL, MERCH & RETAIL	
0.088	DISTRIB EDUC, OTHER	

If percent for program was less than 0.001, information is not included.

TABLE II--continued

PITTSBURGH	UNEMPLOYMENT RATE
0.778	AIRCOND & REFRIG
0.250	ELECTRICAL PROGRAMS
0.254	AUTO & DIESEL MECH
0.250	BUILDING TRADES
0.320	WOODWORKING & CARPEN
0.294	COMMER & GRAPHIC ARTS
0.156	COSMETOLOGY
0.171	DRAFTING
0.185	MACHINE PROGRAMS
0.250	MASONRY/BRICKLAYER
0.100	PLUMBING
0.333	PRINTING PROGRAMS
0.143	SHEET METAL
0.067	WELDING
0.267	T & I, OTHER
0.250	AUTO & DIESEL TECH
0.200	CHEMICAL TECH
0.263	CIVIL TECH
0.231	COMPUTER PROGRAM
0.250	ELECTRICAL TECH
0.375	MECHANICAL TECH
0.167	SCIENTIFIC DATA PROC
0.421	TECHNICAL, OTHER
0.385	HEALTH, OTHER
0.100	AG PROD/GENERAL AG
1.000	ORNAMENTAL HORTICUL
0.217	CHILD CARE
0.364	CLOTHING SERVICES
0.286	FOOD SERVICES
0.500	VOC HOME ECON
0.182	GAINFUL HOME EC, OTHER
0.200	ACCOUNTING/BOOKKEEPING
0.403	CLERK-TYPIST
0.231	DATA PROCESSING
0.289	GENERAL CLERICAL
0.151	STENO/SECRETARIAL
0.344	BUS/OFFICE, OTHER
0.308	FOOD DISTRIBUTION
0.167	APPAREL, MERCH & RETAIL
0.252	DISTRIB EDUC, OTHER

If percent for program was less than 0.001, information is not included.

C. INSTRUCTIONAL PROGRAM/OCCUPATION MATRIX

In presenting the findings as to which occupations graduates from the various instructional programs entered, each program is discussed individually. The reasons for not participating in the labor force, the labor force participation rates and the unemployment rates have also been included for each program. It was felt that by including all the information for each program title, the information would be easier to use by vocational education planners.

Before presenting the findings, it should be explained how the percentages found in the vertical clusters were determined.

a. Reasons for not participating in the labor force:

The percentages were determined by dividing the responses for each reason by the total responses.

Thus, for example:

Percent not looking = number responding ÷ total responses

b. Participation rate:

The percentages were determined by totaling the number of graduates employed and unemployed and then dividing that sum by the total responses.

Thus:

Participation rate = (employed + unemployed) ÷ total responses

c. Unemployment rate:

This rate was determined by dividing the number unemployed by the number participating in the labor force.

Thus:

Unemployment rate = unemployed ÷ (employed + unemployed)

d. Percent employed in a particular occupation:

This rate was determined by dividing the number employed in a particular occupation by the number participating in the labor force.

Thus:

Percent in occ. (x) = number in occ. (x) ÷ (employed + unemployed)

Included in the vertical clusters, there are eight broad occupational categories which provide general information. These categories are totals for a series of occupations that come under the category. Thus, for example, as can be seen in Appendix G, the category CLERICAL & KINDRED includes all occupations from Bank Tellers; to duplicating machine operators; to miscellaneous clerical workers. The names used for the occupational categories are:

Sales Workers
Clerical & Kindred
Craftsmen & Kindred
Operators & Kindred
Laborers, Non-farm
Farmers & Farm Managers
Farm Laborers & Farm Foremen
Service Workers

In addition, there are also 21 occupational divisions under most of the occupational categories such as metal working craftsmen and printing trades. These occupational divisions are also totals for a series of occupations included under the division. Thus, if any attempt is made to total the percentages presented in the vertical clusters reference should be made to Appendix G so as to avoid totaling occupational categories, divisions, and individual occupations.

1. AIR CONDITIONING AND REFRIGERATION

The useable returns from the graduates of the Air Conditioning and Refrigeration program numbered 34, which is 43 percent of the 79 surveyed. Although the percentage responding is rather high the numbers are quite small. Because of this, the findings presented in the accompanying tables should be viewed with caution. For this reason no effort was made to analyse the findings.

TABLE III

AREA: REST OF STATE

1 AIRCOND & REFRIG

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.250
OTHER	0.0
PARTICIPATION RATE	0.750
UNEMPLOYMENT RATE	0.0
CRAFTSMEN & KINDRED	0.667
CONSTRUCTION CRAFTS	0.333
PLUMBERS	0.333
MECH & REPAIRMEN	0.333
AIR COND & REFRIG	0.333
OPERATIVES & KINDRED	0.333
METAL WORK OPERATIVE	0.333
FURNACEMEN	0.167
WELDERS	0.167

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

1 AIRCOND & REFRIG

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.222
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.111
OTHER	0.0
PARTICIPATION RATE	0.667
UNEMPLOYMENT RATE	0.167
CRAFTSMEN & KINDRED	0.500
CONSTRUCTION CRAFTS	0.167
PLUMBERS	0.167
MECH & REPAIRMEN	0.167
AIR COND & REFRIG	0.167
OTHER CRAFTSMEN	0.167
BAKERS	0.167
FARM WORKERS	0.167
FARM LABOR,PAID	0.167
SERVICE WORKERS	0.167
PERSONAL SERVICE	0.167
ATTENDANTS,NEC	0.167

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

1 AIRCOND & REFRIG

NOT LOOKING	0.0
FULL TIME SCHOOL	0.353
PART TIME SCHOOL	0.059
FULL TIME COLLEGE	0.059
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.529
UNEMPLOYMENT RATE	0.778
CRAFTSMEN & KINDRED	0.111
MECH & REPAIRMEN	0.111
HOUSEHOLD APPL	0.111
LABORERS,NON FARM	0.111
CONSTRL.LABORERS	0.111

2. ELECTRICAL PROGRAMS

Out of the 987 graduates surveyed from the Electrical Programs in Pennsylvania public secondary schools, 314 useable returns were obtained, which is about 32.4% of the total surveyed.

According to the table, a rather large percentage of the Pittsburgh LMA graduates seem to have continued their education, about 40%. Those graduates from Philadelphia and the rest of the state, 19% and about 24%, respectively, went on to full-time school or college. These percentages are assumed to represent both a need for higher education and possibly good preparation for continuing education for the graduates from this program.

The participation rate for the Philadelphia LMA is high at about 72% whereas the unemployment rate is significant at about 12%. Pittsburgh LMA graduates from this program have the lowest participation rate of the three areas at 41% and an interestingly high unemployment rate of 25%. The rest of the state also has a low participation rate of about 53%, and a significant unemployment rate of 12.5%.

Those graduates who did not enter the labor market, for the most part, went into the military. About 17% were from the rest of the state, 2.5% from the Philadelphia LMA, and 12.5% were from the Pittsburgh LMA.

Looking at the percentages for highly related occupations in the Pittsburgh LMA and the rest of the state, it becomes obvious that there is some inhibiting factor not allowing a high participation rate in jobs

directly related to the graduates field of study. First, consider those jobs assumed to be highly related to the Electrical Programs. They are:

a) Electricians
b) Mechanics and Repairmen
c) Engineering Technology
d) Telephone Repair
e) Other Craftsmen

Using these as a basis we can see that only 22% of the Pittsburgh LMA graduates about 34% of the graduates from the rest of the state, and about 53% (a more substantial percentage) of the Philadelphia LMA graduates obtained employment in highly related fields. One reason for these low percentages could be the union factor, especially in the Pittsburgh LMA. Union requirements could force the graduates into either continuing their education, or into looking for work in other fields. In fact, 50% of the Pittsburgh LMA graduates found employment in jobs unrelated to their field as did 62% of the graduates from the rest of the state. These two areas also have a high percentage continuing their education, as indicated above. The Philadelphia LMA has somewhat less graduates employed in unrelated fields (40.5%) although this number is also significant in context.

Unrelated fields are assumed to be:

a) Medical
b) Advertising Agents
c) Clerical and Kindred
d) Printing Occupations
e) Plumbers
f) Operatives and Kindred
g) Tile Setters
h) Laborers
i) Metal Workers
j) Service Workers
k) Other Operatives

The graduates who found employment in only slightly related fields form a small percentage (11% for Pittsburgh, about 2% for Philadelphia, and about 5% for the rest of the state). It was assumed here that many of the graduates who became salesmen would be involved in the sale of electric appliances, therefore sales was considered to be slightly related to this program.

TABLE III

AREA: REST OF STATE

2 ELECTRICAL PROGRAMS

NOT LOOKING	0.0
FULL TIME SCHOOL	0.126
PART TIME SCHOOL	0.053
FULL TIME COLLEGE	0.113
PART TIME COLLEGE	0.007
MILITARY	0.172
OTHER	0.0
PARTICIPATION RATE	0.530
UNEMPLOYMENT RATE	0.125
MEDICAL,OTHER	0.012
NURSE AIDES,ORDERLY	0.012
SALES WORKERS	0.025
ADVERTISING AGENTS	0.012
SALESMEN	0.012
CLERICAL & KINDRED	0.025
SHIP & RECEIVING	0.025
CRAFTSMEN & KINDRED	0.362
CONSTRUCTION CRAFTS	0.225
ELECTRICIANS	0.225
METAL WORK CRAFTS	0.012
MACHINISTS	0.012
MECH & REPAIRMEN	0.100
AUTOMOBILE	0.012
HOUSEHOLD APPL	0.025
MISC MECH & REPAIR	0.063
PRINTING TRADES	0.012
COMPOSITORS	0.012
OTHER CRAFTSMEN	0.012
TELEPHONE REPAIR	0.012
OPERATIVES & KINDRED	0.250
CONSTRUCTION OPER	0.012
MISC CONSTRU OPER	0.012
METAL WORK OPERATIVE	0.012
FILERS	0.012
TRANSPORT EQUIP OPER	0.063
DELIVERYMEN	0.025
FORK LIFT OPER	0.025
TRUCK DRIVERS	0.012
SEMISKILLED TEXTILE	0.025
TEXTILE OPERATIVES	0.025
KNITTERS	0.012
WEAVERS	0.012
OTHER OPERATIVES	0.137
MEAT CUTTER,MFG	0.012
MINE OPERATIVES	0.012
MISC OPERATIVES	0.112
LABORERS,NON FARM	0.162
CARPENTER HELPERS	0.012
CONSTRL.LABORERS	0.037
NURSERYMEN	0.037
MISC LABORERS	0.075
SERVICE WORKERS	0.037
FOOD SERVICE	0.012
COOKS	0.012
PERSONAL SERVICE	0.025
ATTENDANTS,NEC	0.025

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

2 ELECTRICAL PROGRAMS

NOT LOCKING	0.013
FULL TIME SCHOOL	0.139
PART TIME SCHOOL	0.051
FULL TIME COLLEGE	0.051
PART TIME COLLEGE	0.0
MILITARY	0.025
OTHER	0.0
PARTICIPATION RATE	0.722
UNEMPLOYMENT RATE	0.123
ENGINEERING TECH	0.018
ELEC & ELEC	0.018
SALES WORKERS	0.018
SALESMEN	0.018
CLERICAL & KINDRED	0.035
SHIP & RECEIVING	0.018
STOCK CLERKS	0.018
CRAFTSMEN & KINDRED	0.561
CONSTRUCTION CRAFTS	0.246
ELECTRICIANS	0.211
PLUMBERS	0.018
TILE SETTERS	0.018
MECH & REPAIRMEN	0.088
AUTOMOBILE	0.018
RADIO & TV	0.035
MISC MECH & REPAIR	0.035
PRINTING TRADES	0.018
PRESSMEN	0.018
OTHER CRAFTSMEN	0.211
LINEMEN & CABLEMEN	0.018
TELEPHONE REPAIR	0.158
TELEPHONE LINEMEN	0.035
OPERATIVES & KINDRED	0.158
CONSTRUCTION OPER	0.018
MISC CONSTRU OPER	0.018
METAL WORK OPERATIVE	0.053
DRILL PRESS	0.018
MACH OPER,NEC	0.018
MISC METAL OPER	0.035
TRANSPORT EQUIP OPER	0.018
DELIVERYMEN	0.018
OTHER OPERATIVES	0.070
MISC OPERATIVES	0.070
LABORERS,NON FARM	0.018
MISC LABORERS	0.018
SERVICE WORKERS	0.070
CLEANING SERVICE	0.035
JANITORS	0.035
PERSONAL SERVICE	0.035
ATTENDANTS,NEC	0.035

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

2 ELECTRICAL PROGRAMS

NOT LOOKING	0.0
FULL TIME SCHOOL	0.295
PART TIME SCHOOL	0.034
FULL TIME COLLEGE	0.102
PART TIME COLLEGE	0.034
MILITARY	0.125
OTHER	0.0
PARTICIPATION RATE	0.409
UNEMPLOYMENT RATE	0.250
ENGINEERING TECH	0.028
ELEC & ELEC	0.028
SALES WORKERS	0.111
SALESMEN	0.111
CLERICAL & KINDRED	0.083
SHIP & RECEIVING	0.056
STOCK CLERKS	0.028
CRAFTSMEN & KINDRED	0.222
CONSTRUCTION CRAFTS	0.083
ELECTRICIANS	0.083
METAL WORK CRAFTS	0.028
SHEET METAL	0.028
MECH & REPAIRMEN	0.083
HOUSEHOLD APPL	0.028
RAILROAD & SHOP	0.028
MISC MECH & REPAIR	0.028
OTHER CRAFTSMEN	0.028
TELEPHONE REPAIR	0.028
OPERATIVES & KINDRED	0.111
METAL WORK OPERATIVE	0.028
MISC METAL OPER	0.028
TRANSPORT EQUIP OPER	0.056
TRUCK DRIVERS	0.028
TRANS OPER NEC	0.028
OTHER OPERATIVES	0.028
MISC OPERATIVES	0.028
LABORERS,NON FARM	0.139
STOCKHANDLERS	0.056
WAREHOUSEMEN NEC	0.028
MISC LABORERS	0.056
SERVICE WORKERS	0.056
FOOD SERVICE	0.028
FOOD SERVICE NEC	0.028
PERSONAL SERVICE	0.028
ATTENDANTS,NEC	0.028

3. AUTOMOTIVE BODY AND FENDER

The useable returns from the graduates of the Auto Body and Fender program numbered 132, which is 24.9 percent of the total of 531 surveyed.

The accompanying table shows that 10.3 and 5.6 percent, respectively, of the graduates from the Philadelphia and Pittsburgh LMA's continued their education full-time. Only 2.4 percent of the rest of the state continued their education on a full-time basis, this was the smallest percentage of all the programs surveyed.

The percent not entering the labor market (not looking for work, entering the military and other) is about 22 percent for the rest of the state and the Pittsburgh LMA's. Approximately 14 percent of the Philadelphia LMA did not enter the labor market.

The labor force participation rate for the graduates of this program is approximately 70 percent for all three LMA's. This is one of the highest participation rates surveyed, and the very slight variation in participation rates would seem to indicate a rather uniform demand for this skill throughout the state.

The unemployment rates for this program are 5.1, 9.5, and 0.0 percent for the rest of the state, Philadelphia and Pittsburgh. Interestingly, Pittsburgh with a 0.0 percent unemployment rate had a relatively high number (5.6%) not looking for work.

Let us assume that the occupations related to the field of study are as follows:

(a) Auto Body Repair
(b) Automobile
(c) Misc. Mech. and Repair
(d) Welder

Based on this assumption 71.2 percent of the rest of the state graduates, 62 percent of the Philadelphia graduates, and 69.2 percent of the Pittsburgh graduates obtained jobs directly related to their field of study. Implications from these findings are that there is a state-wide need for this skill and this program appears to be producing qualified graduates.

It should be noted that the survey returns from the Philadelphia and Pittsburgh LMA;s are rather low, being 29 and 18, respectively. Therefore assumptions based on these areas should be made with reservation.

TABLE III

AREA: REST OF STATE

3 AUTO BODY & FENDER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.012
PART TIME SCHOOL	0.059
FULL TIME COLLEGE	0.012
PART TIME COLLEGE	0.0
MILITARY	0.224
OTHER	0.0
PARTICIPATION RATE	0.694
UNEMPLOYMENT RATE	0.051
SALES WORKERS	0.017
SALESMEN	0.017
CRAFTSMEN & KINDRED	0.763
CONSTRUCTION CRAFTS	0.034
ELECTRICIANS	0.017
ROOFERS	0.017
METAL WORK CRAFTS	0.034
MACHINISTS	0.034
MECH & REPAIRMEN	0.661
AUTO BODY REPAIR	0.593
AUTOMOBILE	0.034
MISC MECH & REPAIR	0.034
OTHER CRAFTSMEN	0.034
BAKERS	0.017
CARPET INSTALLERS	0.017
OPERATIVES & KINDRED	0.119
METAL WORK OPERATIVE	0.051
WELDERS	0.051
TRANSPORT EQUIP OPER	0.034
FORK LIFT OPER	0.034
SEMISKILLED TEXTILE	0.017
TEXTILE OPERATIVES	0.017
TEXTILE OPER NEC	0.017
OTHER OPERATIVES	0.017
MISC OPERATIVES	0.017
LABORERS,NON FARM	0.017
MISC LABORERS	0.017
SERVICE WORKERS	0.034
CLEANING SERVICE	0.017
JANITORS	0.017
FOOD SERVICE	0.017
COUNTER & FOUNTAIN	0.017

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

3 AUTO BODY & FENDER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.034
PART TIME SCHOOL	0.034
FULL TIME COLLEGE	0.069
PART TIME COLLEGE	0.0
MILITARY	0.138
OTHER	0.0
PARTICIPATION RATE	0.724
UNEMPLOYMENT RATE	0.095
CLERICAL & KINDRED	0.095
STOCK CLERKS	0.095
CRAFTSMEN & KINDRED	0.667
CONSTRUCTION CRAFTS	0.048
PAINTERS	0.048
MECH & REPAIRMEN	0.619
AUTO BODY REPAIR	0.571
AUTOMOBILE	0.048
OPERATIVES & KINDRED	0.095
METAL WORK OPERATIVE	0.048
FURNACEMEN	0.048
TRANSPORT EQUIP OPER	0.048
TRUCK DRIVERS	0.048
SERVICE WORKERS	0.048
FOOD SERVICE	0.048
FOOD SERVICE NEC	0.048

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

3 AUTO BODY & FENDER

NOT LOOKING	0.056
FULL TIME SCHOOL	0.056
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.167
OTHER	0.0
PARTICIPATION RATE	0.722
UNEMPLOYMENT RATE	0.0
CRAFTSMEN & KINDRED	0.769
CONSTRUCTION CRAFTS	0.077
PAINTERS	0.077
MECH & REPAIRMEN	0.692
AUTO BODY REPAIR	0.538
AUTOMOBILE	0.077
MISC MECH & REPAIR	0.077
OPERATIVES & KINDRED	0.077
OTHER OPERATIVES	0.077
MISC OPERATIVES	0.077
LABORERS,NON FARM	0.077
MISC LABORERS	0.077
SERVICE WORKERS	0.077
FOOD SERVICE	0.077
FOOD SERVICE NEC	0.077

4. AUTO AND DIESEL MECHANICS

The total number of graduates from this program was 1,584. The useable returns received were 425 which is about 26.7 percent of the total graduates surveyed.

In comparison to other instructional programs, the percent of auto and diesel mechanics graduates continuing their education in college is low. This is also true in relation to continuing education full-time in school, with the exception of Philadelphia LMA graduates from which about 14 percent continued in school full-time. In comparison to all other programs the percent of the graduates who entered the military ranked fourteenth for the rest of the state at about 14 percent, third for the Philadelphia LMA graduates at about 19 percent, and ninth for the Pittsburgh LMA graduates at about 13 percent.

Taking into consideration all reasons for not participating in the labor force, it can be seen that the greatest percent of the graduates from this program entered the labor market. However, because a large percent in the Philadelphia LMA continued full-time school or entered the military, the participation rate for that area is fairly low (61.4%). The unemployment rate, though low for the rest of the state graduates (4.0%) is high for the Philadelphia LMA graduates (18.6%), and extremely so for the Pittsburgh LMA graduates (25.4%).

Before detailing the occupations these graduates entered, it should be pointed out that this program is usually seen as preparing students for very specific occupations for which there are almost no related occupations other than in the general category--Mechanics and

Repairmen. Keeping this in mind, it can be seen that for all the graduates who sought work, 59 percent of the graduates in the rest of the state and 52 percent in the Philadelphia LMA found directly related jobs. However, only 39 percent did so in the Pittsburgh LMA.

If it can be assumed that occupational categories completely unrelated to the training received are:

(a) Sales Workers
(b) Clerical and Kindred
(c) Operatives and Kindred
(d) Laborers, Non-farm
(e) Service Workers

then it can be seen that about 30 percent from the rest of the state, 22 percent from the Philadelphia LMA, and 34 percent from the Pittsburgh LMA found jobs completely unrelated to their training.

These findings appear to indicate that the graduates from this program had a relatively high rate of unemployment and that a large percent could not find jobs directly related to their training. Although the economic situation in the latter part of 1970 may have had adverse affects relative to finding jobs, these findings appear to indicate that the manpower needs for this type of trained graduates are somewhat overstated particularly for the Pittsburgh LMA.

TABLE III

AREA: REST OF STATE

4 AUTO & DIESEL MECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.054
PART TIME SCHOOL	0.040
FULL TIME COLLEGE	0.020
PART TIME COLLEGE	0.005
MILITARY	0.139
OTHER	0.0
PARTICIPATION RATE	0.743
UNEMPLOYMENT RATE	0.040
SALES WORKERS	0.013
SALESMEN	0.013
CLERICAL & KINDRED	0.067
SECRETARIES	0.020
STOCK CLERKS	0.047
CRAFTSMEN & KINDRED	0.647
CONSTRUCTION CRAFTS	0.047
CARPENTERS	0.020
EXCAVATING MACH	0.013
MECH & REPAIRMEN	0.587
AUTOMOBILE	0.553
MISC MECH & REPAIR	0.033
OTHER CRAFTSMEN	0.013
OPERATIVES & KINDRED	0.093
CONSTRUCTION OPER	0.027
SAWYERS	0.013
MISC CONSTRL OPER	0.013
METAL WORK OPERATIVE	0.047
DRILL PRESS	0.013
MISC METAL OPER	0.027
TRANSPORT EQUIP OPER	0.013
TRUCK DRIVERS	0.013
LABORERS, NON FARM	0.073
CONSTRL. LABORERS	0.013
MISC LABORERS	0.047
SERVICE WORKERS	0.053
FOOD SERVICE	0.013
COOKS	0.013
PERSONAL SERVICE	0.033
ATTENDANTS, REC	0.033

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

4 AUTO & DIESEL MECH

NOT LOOKING	0.007
FULL TIME SCHOOL	0.143
PART TIME SCHOOL	0.014
FULL TIME COLLEGE	0.029
PART TIME COLLEGE	0.007
MILITARY	0.186
OTHER	0.0
PARTICIPATION RATE	0.614
UNEMPLOYMENT RATE	0.186
SALES WORKERS	0.023
SALESMEN	0.023
CLERICAL & KINDRED	0.047
COUNTER CLERKS	0.023
STOCK CLERKS	0.012
MISC CLERICAL	0.012
CRAFTSMEN & KINDRED	0.593
CONSTRUCTION CRAFTS	0.012
CARPENTERS	0.012
MECH & REPAIRMEN	0.523
AUTOMOBILE	0.512
MISC MECH & REPAIR	0.012
OTHER CRAFTSMEN	0.058
CARPET INSTALLERS	0.035
CRAFTSMEN,NEC	0.023
OPERATIVES & KINDRED	0.105
METAL WORK OPERATIVE	0.012
MISC METAL OPER	0.012
TRANSPORT EQUIP OPER	0.047
TRUCK DRIVERS	0.047
OTHER OPERATIVES	0.047
BOTTLING OPER	0.012
MEAT CUTTER,NONMFG	0.023
MISC OPERATIVES	0.012
LABORERS,NON FARM	0.012
MISC LABORERS	0.012
SERVICE WORKERS	0.035
CLEANING SERVICE	0.023
JANITORS	0.023
FOOD SERVICE	0.012
FOOD SERVICE NEC	0.012

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

4 AUTO & DIESEL MECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.071
PART TIME SCHOOL	0.048
FULL TIME COLLEGE	0.036
PART TIME COLLEGE	0.012
MILITARY	0.131
OTHER	0.0
PARTICIPATION RATE	0.702
UNEMPLOYMENT RATE	0.254
CLERICAL & KINDRED	0.085
COUNTER CLERKS	0.034
STOCK CLERKS	0.051
CRAFTSMEN & KINDRED	0.407
CONSTRUCTION CRAFTS	0.017
PLUMBERS	0.017
MECH & REPAIRMEN	0.390
AUTOMOBILE	0.373
MISC MECH & REPAIR	0.017
OPERATIVES & KINDRED	0.102
METAL WORK OPERATIVE	0.068
MISC METAL OPER	0.068
OTHER OPERATIVES	0.034
BOTTLING OPER	0.017
MISC OPERATIVES	0.017
LABORERS,NON FARM	0.085
CONSTRL.LABORERS	0.017
STOCKHANDLERS	0.017
MISC LABORERS	0.051
SERVICE WORKERS	0.068
CLEANING SERVICE	0.017
JANITORS	0.017
FOOD SERVICE	0.034
COUNTER & FOUNTAIN	0.017
FOOD SERVICE NEC	0.017
PERSONAL SERVICE	0.017
ATTENDANTS,NEC	0.017

5. BUILDING TRADES

The useable returns from the graduates of the Building Trades program numbered 57, which is 64.8 percent of the 88 that graduated in 1970. The returns from the Philadelphia and Pittsburgh LMA's (8 and 7, respectively) do not constitute a significant percentage of those enrolled; therefore, only those returns from the rest of the state will be discussed.

The accompanying table shows that 9.3 percent of the graduates from the rest of the state continued their education full-time.

The percent not entering the labor market (not looking for work, entering the military and other) is about 23.3 percent for the rest of the state. This program has the third highest percentage entering the military.

The labor force participation rate and the unemployment rate are 62.8 percent and 11.1 percent, respectively--these figures are better than average for this area.

Assuming that the following occupations are related to the field of study:

(a) Brickmasons	(e) Painters
(b) Carpenters	(f) Welders
(c) Cement Finishers	(g) Carpenters Helpers
(d) Electricians	(h) Construction Laborers

Based on this assumption 55.5 percent of the program graduates from this area obtained jobs directly related to their field of study with approximately half of those graduates being employed as carpenters or carpenters helpers.

TABLE III

AREA: REST OF STATE

5 BUILDING TRADES

NOT LOOKING	0.0
FULL TIME SCHOOL	0.023
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.070
PART TIME COLLEGE	0.047
MILITARY	0.233
OTHER	0.0
PARTICIPATION RATE	0.628
UNEMPLOYMENT RATE	0.111
CLERICAL & KINDRED	0.037
STOCK CLERKS	0.037
CRAFTSMEN & KINDRED	0.296
CONSTRUCTION CRAFTS	0.222
BRICKMASONS	0.074
CARPENTERS	0.037
CEMENT FINISHERS	0.037
ELECTRICIANS	0.037
PAINTERS	0.037
METAL WORK CRAFTS	0.037
MACHINISTS	0.037
MECH & REPAIRMEN	0.037
AUTOMOBILE	0.037
OPERATIVES & KINDRED	0.111
METAL WORK OPERATIVE	0.037
WELDERS	0.037
SEMISKILLED TEXTILE	0.074
TEXTILE OPERATIVES	0.074
TEXTILE OPER NEC	0.074
LABORERS,NON FARM	0.296
CARPENTER HELPERS	0.222
CONSTRL. LABORERS	0.037
MISC LABORERS	0.037
SERVICE WORKERS	0.148
CLEANING SERVICE	0.074
JANITORS	0.074
FOOD SERVICE	0.037
FOOD SERVICE NEC	0.037
PERSONAL SERVICE	0.037
ATTENDANTS,NEC	0.037

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

5 BUILDING TRADES

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.125
FULL TIME COLLEGE	0.125
PART TIME COLLEGE	0.0
MILITARY	0.375
OTHER	0.0
PARTICIPATION RATE	0.375
UNEMPLOYMENT RATE	0.667
SERVICE WORKERS	0.333
CLEANING SERVICE	0.333
JANITORS	0.333

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

5 BUILDING TRADES

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.143
PART TIME COLLEGE	0.0
MILITARY	0.286
OTHER	0.0
PARTICIPATION RATE	0.571
UNEMPLOYMENT RATE	0.250
CRAFTSMEN & KINDRED	0.250
CONSTRUCTION CRAFTS	0.250
PAINTERS	0.250
OPERATIVES & KINDRED	0.250
CONSTRUCTION OPER	0.250
ASBESTOS WORKERS	0.250
SERVICE WORKERS	0.250
FOOD SERVICE	0.250
FOOD SERVICE NEC	0.250

6. WOODWORKING AND CARPENTRY PROGRAMS

The follow-up survey questionnaire was sent to the 1,006 graduates from the woodworking and carpentry program. The number of useable returns were 324, which is about 32.2 percent of the total graduates.

The accompanying tables indicate that 11 and 13 percent of the graduates continued their education full-time for the rest of the state and the Philadelphia LMA, respectively. In the Pittsburgh LMA, about 18 percent did so. The percent that entered the military service was about 15 percent for the rest of the state, about 12 percent for the Philadelphia LMA, and about 18 percent for Pittsburgh.

Taking into consideration all of the reasons for not seeking work, the labor force participation rate was 68 percent for the rest of the state, 65 percent for the Philadelphia LMA and about 60 percent for the Pittsburgh LMA. The unemployment rate, though low for the rest of the state (6.3%) and for the Philadelphia LMA (8.0%), is high for the Pittsburgh LMA area (32.0%). As it was pointed out in the earlier findings, the graduates from the Pittsburgh LMA in general have a much higher unemployment rate and, at the same time, a lower participation rate. This would appear to indicate that to a certain extent, the graduates recognize that their employment possibilities are not good (hence the low participation rate). For this reason, it would appear a larger percent of the Pittsburgh LMA graduates are continuing their education full-time or have gone into the military service.

If it can be assumed that the occupations directly related to this program are:

(a) Cabinetmakers
(b) Carpenters
(c) Floor Tilers
(d) Carpenters Helpers

Then, it can be seen that about 48 percent of the rest of the state graduates, 52 percent of the Philadelphia LMA graduates and 32 percent of the Pittsburgh LMA graduates found jobs directly related to their previous studies. These percents are quite low, particularly for the Pittsburgh LMA graduates. Although both national and state-wide projections are that more carpenters and cabinetmakers are needed (4, 11) then are presently being prepared to work in those jobs, in view of these findings, it would appear that there is only a limited need for this type of training.

Based on the assumption that completely unrelated jobs to the woodworking and carpentry programs are jobs in the clerical, metal working, transportation, operative and service fields, it becomes apparent that about 37 percent of the rest of the state graduates and 32 percent from the Philadelphia and the Pittsburgh LMA got jobs completely unrelated to their field of training.

A possible implication from these findings is that the preparation for graduates from this program is quite specific. This is commonly referred to as preparation for a "point-cluster." As a result, the graduates who did not find a job in their specific area of training, gravitated to jobs at a lower skill level and lower salary. This would appear to imply that either the curriculum content should be made more diverse or that the program be reduced in terms of the number of graduates from it.

TABLE III

AREA: REST OF STATE

& WOODWORKING & CARPEN

NOT LOOKING	0.006
FULL TIME SCHOOL	0.037
PART TIME SCHOOL	0.037
FULL TIME COLLEGE	0.074
PART TIME COLLEGE	0.006
MILITARY	0.153
OTHER	0.006
PARTICIPATION RATE	0.681
UNEMPLOYMENT RATE	0.063
ENGINEERING TECH	0.018
CLERICAL & KINDRED	0.045
SHIP & RECEIVING	0.018
STOCK CLERKS	0.018
CRAFTSMEN & KINDRED	0.135
CONSTRUCTION CRAFTS	0.072
CABINETMAKERS	0.045
CARPENTERS	0.027
METAL WORK CRAFTS	0.018
MECH & REPAIRMEN	0.018
MISC MECH & REPAIR	0.018
OTHER CRAFTSMEN	0.027
OPERATIVES & KINDRED	0.234
CONSTRUCTION OPER	0.018
METAL WORK OPERATIVE	0.045
MACHINE OPERATIVES	0.018
DRILL PRESS	0.018
TRANSPORT EQUIP OPER	0.045
TRUCK DRIVERS	0.027
SEMISKILLED TEXTILE	0.018
TEXTILE OPERATIVES	0.018
TEXTILE OPER NEC	0.018
OTHER OPERATIVES	0.108
MISC OPERATIVES	0.090
LABORERS,NON FARM	0.486
CARPENTER HELPERS	0.405
STOCKHANDLERS	0.018
MISC LABORERS	0.054

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

& WOODWORKING & CARPEN

NOT LOOKING	0.013
FULL TIME SCHOOL	0.078
PART TIME SCHOOL	0.065
FULL TIME COLLEGE	0.052
PART TIME COLLEGE	0.013
MILITARY	0.117
OTHER	0.013
PARTICIPATION RATE	0.649
UNEMPLOYMENT RATE	0.080
SALES WORKERS	0.020
SALESMEN	0.020
CLERICAL & KINDRED	0.080
BILLING CLERKS	0.020
STOCK CLERKS	0.060
CRAFTSMEN & KINDRED	0.160
CONSTRUCTION CRAFTS	0.100
CABINETMAKERS	0.040
CARPENTERS	0.040
PAINTERS	0.020
OTHER CRAFTSMEN	0.060
BAKERS	0.020
UPHOLSTERERS	0.020
CRAFTSMEN,NEC	0.020
OPERATIVES & KINDRED	0.140
CONSTRUCTION OPER	0.020
ASBESTOS WORKERS	0.020
OTHER OPERATIVES	0.120
MEAT CUTTER,NONMFG	0.020
PAINTERS,MFG	0.020
MISC OPERATIVES	0.080
LABORERS,NON FARM	0.460
CARPENTER HELPERS	0.440
HORTI & FLORICULT	0.020
MISC LABORERS	0.020
SERVICE WORKERS	0.040
CLEANING SERVICE	0.020
JANITORS	0.020
FOOD SERVICE	0.020
FOOD SERVICE NEC	0.020

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

6 WOODWORKING & CARPEN

NOT LOOKING	0.0
FULL TIME SCHOOL	0.060
PART TIME SCHOOL	0.012
FULL TIME COLLEGE	0.119
PART TIME COLLEGE	0.0
MILITARY	0.036
OTHER	0.179
PARTICIPATION RATE	0.595
UNEMPLOYMENT RATE	0.320
CLERICAL & KINDRED	0.080
MAIL CARRIERS,P.O.	0.020
STOCK CLERKS	0.040
MISC CLERICAL	0.020
CRAFTSMEN & KINDRED	0.100
CONSTRUCTION CRAFTS	0.020
FLOOR LAYERS	0.020
MECH & REPAIRMEN	0.040
AUTOMOBILE	0.020
HOUSEHOLD APPL	0.020
PRINTING TRADES	0.020
PRESSMEN	0.020
OTHER CRAFTSMEN	0.020
CRAFTSMEN,NEC	0.020
OPERATIVES & KINDRED	0.080
OTHER OPERATIVES	0.080
MISC OPERATIVES	0.080
LABORERS,NON FARM	0.340
CARPENTER HELPERS	0.300
STOCKHANDLERS	0.040
SERVICE WORKERS	0.080
CLEANING SERVICE	0.020
JANITORS	0.020
FOOD SERVICE	0.020
FOOD SERVICE NEC	0.020
PERSONAL SERVICE	0.040
ATTENDANTS,NEC	0.040

7. COMMERCIAL AND GRAPHIC ARTS

The useable returns from the graduates of the Commercial and Graphic Arts program numbered 163, which is an estimated 33 percent of the 825 enrolled in the Printing, Commercial and Graphic Arts programs.

The accompanying table shows that 24.3, 30.6, and 19.7 percent, respectively of the graduates from the LMA's of Philadelphia, Pittsburgh and the rest of the state continued their education full-time. The percent not entering the labor market (not looking for work, entering the military and other) for the same respective LMA's are 0.0, 11.1, and 16.4.

The difference in the number of graduates continuing their education full-time may be related to the fact that there are fewer post-secondary education facilities available in the rest of the state. The difference in the number of graduates entering the military may be indicitive of a greater concentration of Commercial Arts as opposed to Graphic Arts programs in the Philadelphia area. This would bring about a higher female to male ratio, and thus reduce the number entering the military.

This programs unemployment rate for the Philadelphia and Pittsburgh LMA's ranks near the median when compared with other curriculums; however, in the rest of the state the unemployment rate is the third lowest. The difference between the unemployment rates for the rest of the state (2.8%), and the Philadelphia (19.5%), Pittsburgh (29.4%) LMA's is quite significant. This is in line with the traditional studies which indicate a significantly higher unemployment rate in center cities and surrounding areas for 16 to 19 year olds.

Assuming that the occupations related to this field of study are:

(a) Designers
(b) Compositors
(c) Photoengravers
(d) Pressman

Then, it can be seen that the number of graduates employed in highly related jobs is relatively low but rather consistent across the state, Philadelphia (22.0%), Pittsburgh (23.6%), and the rest of the state (27.7%). The number employed in these respective areas in unrelated jobs is quite high, 54.8, 41, and 61.1 percents. Implications from these findings are that there is either a limited need for this skill, or that the training is not sufficient for the graduates to satisfy the requirements of the industry.

TABLE III

AREA: REST OF STATE

7 COMMER & GRAPHIC ARTS

NOT LOOKING	0.033
FULL TIME SCHOOL	0.066
PART TIME SCHOOL	0.033
FULL TIME COLLEGE	0.131
PART TIME COLLEGE	0.016
MILITARY	0.131
OTHER	0.0
PARTICIPATION RATE	0.590
UNEMPLOYMENT RATE	0.028
TECH,EXCEPT HEALTH	0.083
DESIGNERS	0.083
MEDICAL,OTHER	0.028
NURSE AIDES,ORDERLY	0.028
SALES WORKERS	0.083
SALESMEN	0.083
CLERICAL & KINDRED	0.139
HEALTH RECORD	0.028
STOCK CLERKS	0.028
TELEPHONE OPER	0.028
MISC CLERICAL	0.056
CRAFTSMEN & KINDRED	0.361
METAL WORK CRAFTS	0.056
MACHINISTS	0.028
TOOL & DIE	0.028
MECH & REPAIRMEN	0.028
MISC MECH & REPAIR	0.028
PRINTING TRADES	0.194
COMPOSITORS	0.111
PRESSMEN	0.083
OTHER CRAFTSMEN	0.083
CRAFTSMEN,NEC	0.083
OPERATIVES & KINDRED	0.194
METAL WORK OPERATIVE	0.056
MISC METAL OPER	0.056
SEMISKILLED TEXTILE	0.083
SEWERS	0.028
TEXTILE OPERATIVES	0.056
KNITTERS	0.028
TEXTILE OPER NEC	0.028
OTHER OPERATIVES	0.056
MISC OPERATIVES	0.056
LABORERS,NON FARM	0.083
MISC LABORERS	0.083

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

7 COMMER & GRAPHIC ARTS

NOT LOOKING	0.0
FULL TIME SCHOOL	0.091
PART TIME SCHOOL	0.106
FULL TIME COLLEGE	0.152
PART TIME COLLEGE	0.030
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.621
UNEMPLOYMENT RATE	0.195
ENGINEERING TECH	0.049
CIVIL	0.024
TECH,NEC	0.024
TECH,EXCEPT HEALTH	0.098
DESIGNERS	0.098
MEDICAL,OTHER	0.024
NURSE AIDES,ORDERLY	0.024
SALES WORKERS	0.049
SALESMEN	0.049
CLERICAL & KINDRED	0.244
FILE CLERKS	0.073
SECRETARIES	0.024
SHIP & RECEIVING	0.024
STENOGRAPHERS	0.024
STOCK CLERKS	0.024
TELEPHONE OPER	0.049
MISC CLERICAL	0.024
CRAFTSMEN & KINDRED	0.195
PRINTING TRADES	0.122
COMPOSITORS	0.024
PHOTOENGRAVERS	0.024
PRESSMEN	0.073
OTHER CRAFTSMEN	0.073
BAKERS	0.024
CRAFTSMEN,NEC	0.049
OPERATIVES & KINDRED	0.073
METAL WORK OPERATIVE	0.024
DRILL PRESS	0.024
PUNCH & STAMP PRESS	0.024
SEMISKILLED TEXTILE	0.024
TEXTILE OPERATIVES	0.024
TEXTILE OPER NEC	0.024
OTHER OPERATIVES	0.024
MISC OPERATIVES	0.024
LABORERS,NON FARM	0.024
HORTI & FLORICULT	0.024
SERVICE WORKERS	0.049
CLEANING SERVICE	0.024
JANITORS	0.024
FOOD SERVICE	0.024
COUNTER & FOUNTAIN	0.024

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

7 COMMER & GRAPHIC ARTS

NOT LOOKING	0.0
FULL TIME SCHOOL	0.167
PART TIME SCHOOL	0.111
FULL TIME COLLEGE	0.139
PART TIME COLLEGE	0.0
MILITARY	0.111
OTHER	0.0
PARTICIPATION RATE	0.472
UNEMPLOYMENT RATE	0.294
TECH,EXCEPT HEALTH	0.118
DESIGNERS	0.118
CRAFTSMEN & KINDRED	0.294
METAL WORK CRAFTS	0.059
MACHINISTS	0.059
MECH & REPAIRMEN	0.059
AUTO BODY REPAIR	0.059
PRINTING TRADES	0.118
ELECTROTYPERS	0.059
PRESSMEN	0.059
OTHER CRAFTSMEN	0.059
CRAFTSMEN,NEC	0.059
LABORERS,NON FARM	0.235
MISC LABORERS	0.235
SERVICE WORKERS	0.059
PERSONAL SERVICE	0.059
ATTENDANTS,NEC	0.059

8. COSMETOLOGY

Out of a total of 781 graduates surveyed from the Cosmetology program in the Pennsylvania public secondary schools, 272 useable returns were obtained which is about 34.8 percent of the total graduates.

A substantial percentage of these graduates went on to further their education. About 16 percent of the graduates from the Pittsburgh LMA, and about 20 percent from both Philadelphia and the rest of the state were attending full-time school or college at the time of the survey.

Among these graduates, there is both a comparatively high participation rate and a high unemployment rate. Of the three areas, Pittsburgh has the highest participation rate at about 73 percent and the lowest unemployment rate at about 16 percent. The Philadelphia LMA is next with a participation rate of about 69 percent and an unemployment rate of about 23 percent, the highest unemployment rate of the three areas. The rest of the state is closely comparable to the Philadelphia percentages with a participation rate of about 69 percent and an unemployment rate of about 20 percent.

There is an interestingly high percentage for all three areas of graduates who were not looking for employment. Pittsburgh is lowest at about 3 percent, Philadelphia is next at about 5 percent, and the rest of the state is highest at about 6 percent.

Of the Pittsburgh LMA graduates, about 59 percent went into cosmetology, the only field which is assumed to be directly related

to their field of study. The Philadelphia LMA graduates only had 52 percent working in cosmetology and the rest of the state had even less at about 44 percent. The rest of the graduates from all three areas found employment in jobs which were unrelated to their field of study. These are:

(a) Sales Workers
(b) Medical
(c) Clerical and Kindred
(d) Craftsmen and Kindred
(e) Operatives and Kindred
(f) Mechanics and Repairmen
(g) Laborers, Non-farm
(h) Food Services
(i) Other Operatives
(j) Welfare Aides

The Philadelphia graduates had about 16 percent working in these fields; Pittsburgh, 25 percent and the rest of the state, about 37 percent. Actually, it is assumed that these figures represent a fairly high percentage of graduates who do not find employment in their field of study although most of the graduates from this program are employed. Reason? There could be a high incidence of graduates changing their attitudes about what kind of employment to look for, or there could be too many graduates from this field.

TABLE III

AREA: REST OF STATE

8 COSMETOLOGY

NOT LOOKING	0.057
FULL TIME SCHOOL	0.186
PART TIME SCHOOL	0.057
FULL TIME COLLEGE	0.014
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.686
UNEMPLOYMENT RATE	0.188
SALES WORKERS	0.063
SALESMEN	0.063
CLERICAL & KINDRED	0.083
CLERICAL ASSTS	0.021
STATISTICAL CLERKS	0.021
TYPISTS	0.021
MISC CLERICAL	0.021
CRAFTSMEN & KINDRED	0.021
MECH & REPAIRMEN	0.021
MISC MECH & REPAIR	0.021
OPERATIVES & KINDRED	0.083
SEMISKILLED TEXTILE	0.063
SEWERS	0.063
OTHER OPERATIVES	0.021
MISC OPERATIVES	0.021
LABORERS,NON FARM	0.083
MISC LABORERS	0.083
SERVICE WORKERS	0.479
FOOD SERVICE	0.042
WAITERS	0.042
PERSONAL SERVICE	0.438
COSMETOLOGISTS	0.438

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

& COSMETOLOGY

NOT LOOKING	0.053
FULL TIME SCHOOL	0.158
PART TIME SCHOOL	0.044
FULL TIME COLLEGE	0.044
PART TIME COLLEGE	0.0
MILITARY	0.009
OTHER	0.0
PARTICIPATION RATE	0.693
UNEMPLOYMENT RATE	0.228
MEDICAL,OTHER	0.025
NURSE AIDES,ORDERLY	0.025
CLERICAL & KINDRED	0.101
BILLING CLERKS	0.025
OFFICE MACH OPER	0.013
DUPLICATING MACH	0.013
STATISTICAL CLERKS	0.025
MISC CLERICAL	0.038
OPERATIVES & KINDRED	0.013
OTHER OPERATIVES	0.013
MISC OPERATIVES	0.013
LABORERS,NON FARM	0.025
MISC LABORERS	0.025
SERVICE WORKERS	0.608
FOOD SERVICE	0.089
COUNTER & FOUNTAIN	0.013
WAITERS	0.076
PERSONAL SERVICE	0.519
COSMETOLOGISTS	0.519

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

8 COSMETOLOGY

NOT LOOKING	0.034
FULL TIME SCHOOL	0.091
PART TIME SCHOOL	0.080
FULL TIME COLLEGE	0.068
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.727
UNEMPLOYMENT RATE	0.156
SALES WORKERS	0.031
SALESMEN	0.031
CLERICAL & KINDRED	0.094
STOCK CLERKS	0.047
TELEPHONE OPER	0.016
TYPISTS	0.031
SERVICE WORKERS	0.719
FOOD SERVICE	0.109
COUNTER & FOUNTAIN	0.031
WAITERS	0.063
FOOD SERVICE NEC	0.016
PERSONAL SERVICE	0.609
COSMETOLOGISTS	0.594
WELFARE AIDES	0.016

9. DRAFTING

The useable returns from the graduates of the Drafting program numbered 308, which is about 54 percent of the 571 students who graduated from this program.

The accompanying tables show that 53.7 percent, 26.1 percent, and 35.4 percent, respectively of the graduates from the rest of the state, Philadelphia, and Pittsburgh LMA's continued their education full-time. It is interesting to note that the number enrolled in full-time higher education from the rest of the state is significantly higher than the other areas. This relationship is the inverse of that for the majority of programs, and may very well be attributed to the distribution of Commonwealth Campuses throughout the state and their programs in Drafting Technology. A somewhat similar distribution was observed for the Electrical Technology program and the availability of advanced programs on Commonwealth Campuses is much the same for this curriculum.

The percent not entering the labor market for other reasons is contributed solely by those entering the military. Reports of 13.3 percent, 6.5 percent and 22.9 percent respectively from the rest of the state, Philadelphia and Pittsburgh LMA's were observed.

Considering the reasons for not seeking work the labor force participation rate for these graduates is about 29 percent, 56 percent, and 36 percent respectively for the rest of the state, Philadelphia, and Pittsburgh LMA's. These differences are largely related to the fact that a lesser percentage of the graduates from the Philadelphia and Pittsburgh LMA's are continuing their education.

This program's unemployment rate is higher for the Philadelphia and Pittsburgh LMA's than for the rest of the state. This being in agreement with traditional findings for 16-19 year olds in center cities and surrounding areas.

Assuming that the occupations, Dratting and Surveying are highly related to this field of study, then the findings are that 36.7 percent, 30.8 percent, and 31.4 percent respectively of the rest of the state, Philadelphia, and Pittsburgh LMA's found jobs directly related to their field of study. The percentage of graduates working in jobs unrelated to their field of study is approximately 50 percent for all areas. Implications from these findings are that there is a rather uniform demand for Draftsmen, but not necessarily a high demand. However, a high percentage of the graduates elected to continue their education. Based on the assumption that a significant number of these graduates continued their education in the Drafting Technology programs, implications based on studies of graduates of the Commonwealth Campus Drafting programs are that a very high number obtain jobs in their field of study.

TABLE III

AREA: REST OF STATE

$ DRAFTING

NOT LOOKING	0.0
FULL TIME SCHOOL	0.127
PART TIME SCHOOL	0.018
FULL TIME COLLEGE	0.410
PART TIME COLLEGE	0.018
MILITARY	0.133
OTHER	0.0
PARTICIPATION RATE	0.295
UNEMPLOYMENT RATE	0.061
TECH,EXCEPT HEALTH	0.408
DRAFTSMEN	0.347
SURVEYORS	0.020
TECHNICIANS,NEC	0.041
SALES WORKERS	0.061
SALESMEN	0.061
CLERICAL & KINDRED	0.061
ENUMERATORS	0.020
MAIL CARRIERS,P.O.	0.020
STOCK CLERKS	0.020
CRAFTSMEN & KINDRED	0.122
CONSTRUCTION CRAFTS	0.041
ELECTRICIANS	0.020
PAINTERS	0.020
METAL WORK CRAFTS	0.020
TOOL & DIE	0.020
MECH & REPAIRMEN	0.041
AUTOMOBILE	0.041
OTHER CRAFTSMEN	0.020
BAKERS	0.020
OPERATIVES & KINDRED	0.061
CONSTRUCTION OPER	0.020
MISC CONSTRU OPER	0.020
OTHER OPERATIVES	0.041
MEAT CUTTER,NONMFG	0.020
MISC OPERATIVES	0.020
LABORERS,NON FARM	0.184
NURSERYMEN	0.020
MISC LABORERS	0.163
SERVICE WORKERS	0.041
CLEANING SERVICE	0.020
JANITORS	0.020
PERSONAL SERVICE	0.020
CHILD CARE WORKERS	0.020

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

9 DRAFTING

NOT LOOKING	0.0
FULL TIME SCHOOL	0.109
PART TIME SCHOOL	0.043
FULL TIME COLLEGE	0.152
PART TIME COLLEGE	0.065
MILITARY	0.065
OTHER	0.0
PARTICIPATION RATE	0.565
UNEMPLOYMENT RATE	0.192
TECH,EXCEPT HEALTH	0.346
DRAFTSMEN	0.308
TECHNICIANS,NEC	0.038
CLERICAL & KINDRED	0.077
STOCK CLERKS	0.038
MISC CLERICAL	0.038
CRAFTSMEN & KINDRED	0.115
MECH & REPAIRMEN	0.077
AUTO BODY REPAIR	0.038
AUTOMOBILE	0.038
OTHER CRAFTSMEN	0.038
TELEPHONE REPAIR	0.038
LABORERS,NON FARM	0.231
CARPENTER HELPERS	0.038
MISC LABORERS	0.192
SERVICE WORKERS	0.038
PERSONAL SERVICE	0.038
ATTENDANTS,NEC	0.038

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

$ DRAFTING

NOT LOOKING	0.0
FULL TIME SCHOOL	0.052
PART TIME SCHOOL	0.021
FULL TIME COLLEGE	0.302
PART TIME COLLEGE	0.031
MILITARY	0.229
OTHER	0.0
PARTICIPATION RATE	0.365
UNEMPLOYMENT RATE	0.171
TECH,EXCEPT HEALTH	0.371
DRAFTSMEN	0.314
TECHNICIANS,NEC	0.057
CLERICAL & KINDRED	0.114
CASHIERS	0.029
STATISTICAL CLERKS	0.057
TELEPHONE OPER	0.029
CRAFTSMEN & KINDRED	0.057
CONSTRUCTION CRAFTS	0.057
PAINTERS	0.029
ROOFERS	0.029
OPERATIVES & KINDRED	0.029
TRANSPORT EQUIP OPER	0.029
TRANS OPER NEC	0.029
LABORERS,NON FARM	0.143
STOCKHANDLERS	0.029
MISC LABORERS	0.114
SERVICE WORKERS	0.114
CLEANING SERVICE	0.029
JANITORS	0.029
FOOD SERVICE	0.057
COOKS	0.029
COUNTER & FOUNTAIN	0.029
PERSONAL SERVICE	0.029
ATTENDANTS,NEC	0.029

10. HEAVY EQUIPMENT CONSTRUCTION

Inasmuch as only 19 useable survey forms were received from graduates from this program, the findings should not be considered significant. Also, no information is available on how many students graduated from this program in 1970.

TABLE III

AREA: REST OF STATE

10 HEAVY EQUIP CONSTRU

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	1.000
UNEMPLOYMENT RATE	0.0
ENGINEERING TECH	0.050
ELEC & ELEC	0.050
MED & HEALTH TECH	0.100
HEALTH TECH,NEC	0.100
MEDICAL,OTHER	0.050
NURSE AIDES,ORDERLY	0.050
CLERICAL & KINDRED	0.450
CASHIERS	0.050
BILLING CLERKS	0.100
SECRETARIES	0.050
STENOGRAPHERS	0.100
STOCK CLERKS	0.050
TELEPHONE OPER	0.050
TYPISTS	0.050
CRAFTSMEN & KINDRED	0.100
CONSTRUCTION CRAFTS	0.050
CARPENTERS	0.050
OTHER CRAFTSMEN	0.050
CRAFTSMEN,NEC	0.050
OPERATIVES & KINDRED	0.100
OTHER OPERATIVES	0.100
ASSEMBLERS	0.100
SERVICE WORKERS	0.150
FOOD SERVICE	0.150
WAITERS	0.100
FOOD SERVICE NEC	0.050

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

10 HEAVY EQUIP CONSTRU

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.0
UNEMPLOYMENT RATE	0.0

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

10 HEAVY EQUIP CONSTRU

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.0
UNEMPLOYMENT RATE	0.0

11. MACHINE PROGRAMS

The useable returns from the graduates of the Machine programs numbered 344, which is about 32 percent of the 1,093 students who graduated from this program.

The accompanying tables show that 11.2 percent, 13.2 percent, and 15.7 percent respectively of the graduates from the rest of the state, Philadelphia and Pittsburgh LMA's continued their education full-time. The percent not entering the labor market (not looking for work, entering the military, and other) is 20.7 percent, 14.7 percent, and 18.8 percent respectively for the rest of the state, Philadelphia, and Pittsburgh LMA's. The percent not entering the labor market is based largely on those entering the military, and the percentages for the graduates of this program are about 5 percent higher than the state-wide average for all programs.

Considering the reasons for not seeking work, the labor force participation rate for these graduates is about 63 percent, 69 percent, and 56 percent, respectively for the rest of the state, Philadelphia, and Pittsburgh LMA's. These differences are due largely to the combined effects of graduates continuing their education, and those who entered the military.

This program's unemployment rate is higher in the Philadelphia and Pittsburgh LMA's than in the rest of the state. This is in agreement with traditional findings for 16-19 year olds in center cities and surrounding areas.

Assuming that the following occupations are highly related to this field of study:

(a) Machinist
(b) Tool and Die
(c) Metal Work Operative
(d) Drill Press Operator
(e) Automobile Repair
(f) Misc. Merchanic and Repair
(g) Sheet Metal

Thus, based on this assumption, 61.2 percent, 68.1 percent, and 60.5 percent respectively of the graduates of this program from the rest of the state, Philadelphia, and Pittsburgh LMA's found jobs directly related to their field of study. Implications from these findings are that there is a significant demand for graduates of this program, and the demand is rather uniform throughout the state of Pennsylvania.

TABLE III

AREA: REST OF STATE

11 MACHINE PROGRAMS

NOT LOOKING	0.011
FULL TIME SCHOOL	0.045
PART TIME SCHOOL	0.006
FULL TIME COLLEGE	0.067
PART TIME COLLEGE	0.039
MILITARY	0.196
OTHER	0.0
PARTICIPATION RATE	0.637
UNEMPLOYMENT RATE	0.096
CLERICAL & KINDRED	0.026
SHIP & RECEIVING	0.026
CRAFTSMEN & KINDRED	0.614
METAL WORK CRAFTS	0.482
MACHINISTS	0.430
TOOL & DIE	0.053
MECH & REPAIRMEN	0.105
AUTOMOBILE	0.018
MISC MECH & REPAIR	0.088
OTHER CRAFTSMEN	0.018
OPERATIVES & KINDRED	0.079
METAL WORK OPERATIVE	0.018
OTHER OPERATIVES	0.061
MISC OPERATIVES	0.053
LABORERS,NON FARM	0.079
CONSTRL.LABORERS	0.061
MISC LABORERS	0.018
SERVICE WORKERS	0.088
CLEANING SERVICE	0.026
JANITORS	0.026
FOOD SERVICE	0.035
FOOD SERVICE NEC	0.018
PERSONAL SERVICE	0.026
ATTENDANTS,NEC	0.026

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

11 MACHINE PROGRAMS

NOT LOOKING	0.0
FULL TIME SCHOOL	0.132
PART TIME SCHOOL	0.029
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.147
OTHER	0.0
PARTICIPATION RATE	0.691
UNEMPLOYMENT RATE	0.128
TECH,EXCEPT HEALTH	0.021
PHOTOGRAPHERS	0.021
CLERICAL & KINDRED	0.043
SHIP & RECEIVING	0.021
STOCK CLERKS	0.021
CRAFTSMEN & KINDRED	0.723
METAL WORK CRAFTS	0.596
MACHINISTS	0.447
MILLWRIGHTS	0.021
TOOL & DIE	0.128
MECH & REPAIRMEN	0.106
AIR COND & REFRIG	0.021
AUTO BODY REPAIR	0.021
AUTOMOBILE	0.021
MISC MECH & REPAIR	0.043
OTHER CRAFTSMEN	0.021
CRAFTSMEN,NEC	0.021
OPERATIVES & KINDRED	0.064
OTHER OPERATIVES	0.064
ASSEMBLERS	0.021
PHOTO PROCESS WORK	0.021
MISC OPERATIVES	0.021
SERVICE WORKERS	0.021
CLEANING SERVICE	0.021
JANITORS	0.021

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

11 MACHINE PROGRAMS

NOT LOOKING	0.021
FULL TIME SCHOOL	0.094
PART TIME SCHOOL	0.083
FULL TIME COLLEGE	0.063
PART TIME COLLEGE	0.010
MILITARY	0.167
OTHER	0.0
PARTICIPATION RATE	0.563
UNEMPLOYMENT RATE	0.185
TECH,EXCEPT HEALTH	0.019
COMPUTER PROGRAMMER	0.019
SALES WORKERS	0.037
SALESMEN	0.037
CLERICAL & KINDRED	0.019
SHIP & RECEIVING	0.019
CRAFTSMEN & KINDRED	0.574
METAL WORK CRAFTS	0.463
MACHINISTS	0.370
SHEET METAL	0.019
TOOL & DIE	0.074
MECH & REPAIRMEN	0.074
AUTOMOBILE	0.056
MISC MECH & REPAIR	0.019
OTHER CRAFTSMEN	0.037
AUTO ACCESS INSTALL	0.019
CRAFTSMEN,NEC	0.019
OPERATIVES & KINDRED	0.074
METAL WORK OPERATIVE	0.019
DRILL PRESS	0.019
MACH OPER,NEC	0.019
TRANSPORT EQUIP OPER	0.019
TRUCK DRIVERS	0.019
OTHER OPERATIVES	0.037
MISC OPERATIVES	0.037
LABORERS,NON FARM	0.037
CONSTRU. LABORERS	0.019
HORTI & FLORICULT	0.019
SERVICE WORKERS	0.056
FOOD SERVICE	0.019
FOOD SERVICE NEC	0.019
PERSONAL SERVICE	0.037
ATTENDANTS,NEC	0.037

12. MASONRY/BRICKLAYER

In 1970, the total number graduates from this program was 199. The useable returns received were 46, or about 23.2 percent of the total. Because most of the returns (33) were from graduates from the rest of the state, no attempt should be made to analyze the findings for the other two areas. Also, there is some question as to how significant the findings are for the rest of the state.

As it can be seen in the accompanying table, almost all the graduates from the rest of the state went directly into the labor force with the exception of the 15 percent who joined the Armed Forces. Of those who did enter the labor force, 11.5 percent were unemployed at the time the survey was conducted.

Assuming that completely related jobs are Brickmason and Plasterer, it can be seen that 46.2 percent of the graduates found jobs directly related to their field of study. The rest (42.3%) found diverse jobs in such unrelated fields as:

(a) Clerical and Kindred
(b) Operatives and Kindred
(c) Laborers, Non-farm
(d) Service Work
(e) Unrelated Crafts and Kindred Occupations

This could perhaps be explained, in part, by the fact that the training in this program is largely geared to jobs in the construction industry which is somewhat difficult to enter due to unionization. Also, the fact that the students are for the most part only eighteen years of age may make it difficult for the students to get construction jobs.

However, as mentioned earlier, the number of responses was small and therefore, the findings may not be significant.

TABLE III

AREA: REST OF STATE

12 MASONRY/BRICKLAYER

NOT LOOKING	0.030
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.030
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.152
OTHER	0.0
PARTICIPATION RATE	0.788
UNEMPLOYMENT RATE	0.115
CLERICAL & KINDRED	0.038
STOCK CLERKS	0.038
CRAFTSMEN & KINDRED	0.577
CONSTRUCTION CRAFTS	0.462
BRICKMASONS	0.385
PLASTERERS	0.077
METAL WORK CRAFTS	0.038
MACHINISTS	0.038
MECH & REPAIRMEN	0.077
AIR COND & REFRIG	0.038
AUTOMOBILE	0.038
OPERATIVES & KINDRED	0.115
METAL WORK OPERATIVE	0.115
MISC METAL OPER	0.115
LABORERS,NON FARM	0.077
FREIGHT HANDLERS	0.038
STOCKHANDLERS	0.038
SERVICE WORKERS	0.077
PERSONAL SERVICE	0.077
ATTENDANTS,NEC	0.077

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

12 MASONRY/BRICKLAYER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.167
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.833
UNEMPLOYMENT RATE	0.0
CRAFTSMEN & KINDRED	1.000
CONSTRUCTION CRAFTS	0.800
BRICKMASONS	0.600
CRANESMEN	0.200
METAL WORK CRAFTS	0.200
SHEET METAL	0.200

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

12 MASONRY/BRICKLAYER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.429
OTHER	0.0
PARTICIPATION RATE	0.571
UNEMPLOYMENT RATE	0.250
SALES WORKERS	0.250
SALESMEN	0.250
CLERICAL & KINDRED	0.250
SHIP & RECEIVING	0.250
CRAFTSMEN & KINDRED	0.250
METAL WORK CRAFTS	0.250
MACHINISTS	0.250

13. PLUMBING

The useable returns from the graduates of the Plumbing program numbered 63, which is about 35 percent of the 181 graduates from this program.

The accompanying tables show that none of the respondents to this survey continued their education on a full-time basis. This, obviously, is the lowest rate of any program.

The percent not entering the labor market from this program is based entirely on those entering the military. Reports of 17.4 percent, 13.3 percent, and 0.0 percent respectively from the rest of the state, Philadelphia, and Pittsburgh LMA's were recorded.

Considering the reasons for not seeking work, the labor force participation rate for these graduates is 82.5 percent, 73.3 percent, and 100 percent respectively for the rest of the state, Philadelphia, and Pittsburgh LMA's. These rates are quite high, largely because of the fact that none of the graduates are continuing their education full-time.

This program's unemployment rate is one of the lowest on a state-wide average, with no reported unemployment in the rest of the state and Philadelphia LMA's, and 10 percent in the Pittsburgh LMA.

Assuming that the occupations, Plumbing and Air Conditioning and Refrigeration are highly related to this field of study, then the findings are that 47.4 percent, 72.7 percent, and 30 percent respectively from the rest of the state, Philadelphia, and Pittsburgh LMA's found jobs directly related to their field of study. Implications

from these findings are that there is a rather high demand for graduates of the Plumbing program in the Philadelphia area, but the demand is significantly lower in the other two areas.

TABLE III

AREA: REST OF STATE

13 PLUMBING

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.174
OTHER	0.0
PARTICIPATION RATE	0.826
UNEMPLOYMENT RATE	0.0
CLERICAL & KINDRED	0.053
SHIP & RECEIVING	0.053
CRAFTSMEN & KINDRED	0.579
CONSTRUCTION CRAFTS	0.316
BRICKMASONS	0.053
PLUMBERS	0.263
MECH & REPAIRMEN	0.263
AIR COND & REFRIG	0.211
AUTOMOBILE	0.053
OPERATIVES & KINDRED	0.211
CONSTRUCTION OPER	0.053
MISC CONSTRU OPER	0.053
OTHER OPERATIVES	0.158
MIXING OPERATIVES	0.053
MISC OPERATIVES	0.105
LABORERS,NON FARM	0.158
CARPENTER HELPERS	0.053
HORTI & FLORICULT	0.105

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

13 PLUMBING

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.133
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.133
OTHER	0.0
PARTICIPATION RATE	0.733
UNEMPLOYMENT RATE	0.0
CLERICAL & KINDRED	0.045
STOCK CLERKS	0.045
CRAFTSMEN & KINDRED	0.818
CONSTRUCTION CRAFTS	0.636
PLUMBERS	0.636
MECH & REPAIRMEN	0.182
AIR COND & REFRIG	0.091
AUTOMOBILE	0.045
MISC MECH & REPAIR	0.045
OPERATIVES & KINDRED	0.136
TRANSPORT EQUIP OPER	0.045
DELIVERYMEN	0.045
OTHER OPERATIVES	0.091
ASSEMBLERS	0.045
MISC OPERATIVES	0.045

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

13 PLUMBING

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	1.000
UNEMPLOYMENT RATE	0.100
CLERICAL & KINDRED	0.300
SHIP & RECEIVING	0.100
STOCK CLERKS	0.200
CRAFTSMEN & KINDRED	0.300
CONSTRUCTION CRAFTS	0.300
PLUMBERS	0.300
OPERATIVES & KINDRED	0.300
CONSTRUCTION OPER	0.100
MISC CONSTRU OPER	0.100
TRANSPORT EQUIP OPER	0.100
TRUCK DRIVERS	0.100
OTHER OPERATIVES	0.100
MEAT CUTTER,NONMFG	0.100

14. PRINTING PROGRAMS

Out of the 825 graduates from the Commercial, Graphic Arts and Printing programs 272 useable returns were received. Unfortunately, due to the fact that no information is available as to the actual number of graduates from the Printing Programs, it cannot be determined what the 109 useable returns from the Printing Programs represent of the total graduates from this program. However, it is estimated that about 33 percent of the total responded. Because the number of useable returns from the Philadelphia and Pittsburgh LMA graduates was only 31 and 29 respectively, the results for those two areas should be received with reservation.

The percent continuing their education was quite diverse ranging from a low of 6.4 percent for the Philadelphia LMA to a high of 27.5 percent for the Pittsburgh LMA graduates for the rest of the state, about 15 percent continued their education. The actual percent who entered the military is moderate compared to other trade and industrial programs at 20.5 percent, 16.1 percent and 10.3 percent respectively for the rest of the state, Philadelphia and the Pittsburgh LMA.

The labor force participation rates for the rest of the state and the Pittsburgh LMA is low at 59 percent and 52 percent respectively. The Philadelphia LMA graduates have a much higher participation rate at about 74 percent. This is primarily due to the fact that a relatively small percent continued their education and entered the military.

As it has been seen for other programs, the unemployment rate is lowest for graduates from the rest of the state (8.7%) and high for the

Philadelphia LMA (21.7%) and the Pittsburgh LMA graduates (33.3%). This is particularly revealing in view of the fact that the Pittsburgh LMA had a lower general unemployment rate at the time the survey was conducted.

Assuming that the only jobs related to printing programs are those under the heading of printing trades, then it can be seen that most of the graduates from the rest of the state (78.3%) got jobs related to their training. For the other two areas this is not the case and only 43.5 percent and 26.7 percent respectively from the Philadelphia and Pittsburgh LMA got related jobs. There appears to be an inverse relationship between the rate of unemployment and the percent that found related jobs. A tentative conclusion, therefore, would be that the demand for this type of training is being matched by the supply for the rest of the state and for the other two areas the demand is low.

If it is assumed that unrelated jobs are in the occupational categories of:

(a) Sales Workers
(b) Clerical and Kindred
(c) Operatives and Kindred
(d) Service Workers

It can be seen that only 13 percent of the rest of the state graduates found unrelated jobs. On the other hand, 26 and 40 percent respectively of the Philadelphia and Pittsburgh LMA's found unrelated jobs. These latter findings again appear to point out that there is a low demand for skilled persons in the printing occupations for the Pittsburgh and Philadelphia LMA's.

TABLE III

AREA: REST OF STATE

14 PRINTING PROGRAMS

NOT LOOKING	0.026
FULL TIME SCHOOL	0.103
PART TIME SCHOOL	0.026
FULL TIME COLLEGE	0.051
PART TIME COLLEGE	0.0
MILITARY	0.205
OTHER	0.0
PARTICIPATION RATE	0.590
UNEMPLOYMENT RATE	0.087
CRAFTSMEN & KINDRED	0.783
PRINTING TRADES	0.783
COMPOSITORS	0.087
PHOTOENGRAVERS	0.087
PRESSMEN	0.609
OPERATIVES & KINDRED	0.087
OTHER OPERATIVES	0.087
MISC OPERATIVES	0.087
LABORERS,NON FARM	0.043
CONSTRL.LABORERS	0.043

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

14 PRINTING PROGRAMS

NOT LOOKING	0.0
FULL TIME SCHOOL	0.032
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.032
PART TIME COLLEGE	0.0
MILITARY	0.161
OTHER	0.032
PARTICIPATION RATE	0.742
UNEMPLOYMENT RATE	0.217
CLERICAL & KINDRED	0.087
BILLING CLERKS	0.043
SECRETARIES	0.043
CRAFTSMEN & KINDRED	0.522
CONSTRUCTION CRAFTS	0.043
CARPENTERS	0.043
MECH & REPAIRMEN	0.043
AUTOMOBILE	0.043
PRINTING TRADES	0.435
COMPOSITORS	0.130
PHOTOENGRAVERS	0.043
PRESSMEN	0.261
OPERATIVES & KINDRED	0.087
OTHER OPERATIVES	0.087
PHOTO PROCESS WORK	0.043
MISC OPERATIVES	0.043
SERVICE WORKERS	0.087
FOOD SERVICE	0.087
COOKS	0.043
FOOD SERVICE NEC	0.043

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

14 PRINTING PROGRAMS

NOT LOOKING	0.0
FULL TIME SCHOOL	0.103
PART TIME SCHOOL	0.103
FULL TIME COLLEGE	0.172
PART TIME COLLEGE	0.0
MILITARY	0.103
OTHER	0.0
PARTICIPATION RATE	0.517
UNEMPLOYMENT RATE	0.333
SALES WORKERS	0.067
SALESMEN	0.067
CLERICAL & KINDRED	0.067
STOCK CLERKS	0.067
CRAFTSMEN & KINDRED	0.267
PRINTING TRADES	0.267
COMPOSITORS	0.067
PRESSMEN	0.200
OPERATIVES & KINDRED	0.133
OTHER OPERATIVES	0.133
MISC OPERATIVES	0.133
LABORERS,NON FARM	0.133
CONSTRL.LABORERS	0.133

15. SHEET METAL

The useable returns from the graduates of the Sheet Metal program numbered 30, which is 18.7 percent of the 182 surveyed. Based on the fact that the number and percent of useable returns was small, the findings detailed in the accompanying tables should not be considered significant. For this reason no further analysis was conducted.

TABLE III

AREA: REST OF STATE

15 SHEET METAL

NOT LOOKING	0.0
FULL TIME SCHOOL	0.154
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.231
OTHER	0.0
PARTICIPATION RATE	0.615
UNEMPLOYMENT RATE	0.0
CLERICAL & KINDRED	0.125
SHIP & RECEIVING	0.125
CRAFTSMEN & KINDRED	0.125
METAL WORK CRAFTS	0.125
SHEET METAL	0.125
OPERATIVES & KINDRED	0.625
CONSTRUCTION OPER	0.125
MISC CONSTRU OPER	0.125
METAL WORK OPERATIVE	0.125
HEATERS,METAL	0.125
OTHER OPERATIVES	0.375
MISC OPERATIVES	0.375
SERVICE WORKERS	0.125
PERSONAL SERVICE	0.125
ATTENDANTS,REC	0.125

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

15 SHEET METAL

NOT LOOKING	0.0
FULL TIME SCHOOL	0.250
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.125
PART TIME COLLEGE	0.0
MILITARY	0.250
OTHER	0.0
PARTICIPATION RATE	0.375
UNEMPLOYMENT RATE	0.0
SALES WORKERS	0.333
SALESMEN	0.333
CLERICAL & KINDRED	0.333
STOCK CLERKS	0.333
CRAFTSMEN & KINDRED	0.333
METAL WORK CRAFTS	0.333
SHEET METAL	0.333

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

15 SHEET METAL

NOT LOOKING	0.0
FULL TIME SCHOOL	0.222
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.778
UNEMPLOYMENT RATE	0.143
CRAFTSMEN & KINDRED	0.429
MECH & REPAIRMEN	0.286
HOUSEHOLD APPL	0.286
PRINTING TRADES	0.143
PRESSMEN	0.143
OPERATIVES & KINDRED	0.429
METAL WORK OPERATIVE	0.143
MISC METAL OPER	0.143
OTHER OPERATIVES	0.286
BOTTLING OPER	0.143
MISC OPERATIVES	0.143

16. WELDING

In 1970, a total of 387 vocational-technical students graduated from the Welding program. A total of 103 useable returns were received from these graduates. This represents about 26.6 percent of the total graduates.

From the accompanying tables, it can be seen that only a small percent continued their education full-time with the exception of the Pittsburgh LMA graduates (9.0%). On the other hand, the percent entering the military was especially high for the rest of the state graduates (30.8%).

The labor force participation rate for all three areas was fairly uniform, ranging from 61.5 percent for the rest of the state to 68.2 percent for the Pittsburgh LMA graduates. Although the rate of unemployment was fairly low for the Pittsburgh LMA graduates (6.7%) and the Philadelphia LMA graduates (9.1%), for the rest of the state the rate is quite high (22.5%).

For those that did find employment, it can be seen that for the rest of the state and the Philadelphia LMA about 55 percent found jobs as welders. Interestingly, the percentage is higher (66.7%) for the Pittsburgh LMA. This may be due to the fact that there are a larger number of heavy steel industries in that area.

Assuming that unrelated jobs are in the following fields:

(a) Semi-skilled Textile
(b) Other Operatives
(c) Laborers, Non-farm
(d) Service Workers

It can be seen that about 15 percent from the rest of the state, 36 percent from the Philadelphia LMA and 27 percent from the Pittsburgh LMA found jobs unrelated to their field of study. Considering the results from other instructional programs, the percent of graduates from this program finding unrelated work is low. Also, even though this program tends to prepare students for a point cluster, a significantly large percent of the students are finding a directly related job. This would appear to indicate that the students are getting adequate training and there is a need for their skills. However, there is some reservation if this is true for the rest of the state in view of the high unemployment rate.

TABLE III

AREA: REST OF STATE

16 WELDING

NOT LOOKING	0.015
FULL TIME SCHOOL	0.015
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.015
PART TIME COLLEGE	0.015
MILITARY	0.308
OTHER	0.015
PARTICIPATION RATE	0.615
UNEMPLOYMENT RATE	0.225
CRAFTSMEN & KINDRED	0.025
MECH & REPAIRMEN	0.025
AIR COND & REFRIG	0.025
OPERATIVES & KINDRED	0.675
METAL WORK OPERATIVE	0.600
WELDERS	0.550
MISC METAL OPER	0.050
SEMISKILLED TEXTILE	0.025
TEXTILE OPERATIVES	0.025
TEXTILE OPER NEC	0.025
OTHER OPERATIVES	0.050
PAINTERS,MFG	0.025
MISC OPERATIVES	0.025
LABORERS,NON FARM	0.050
CONSTRL.LABORERS	0.025
HORTI & FLORICULT	0.025
SERVICE WORKERS	0.025
CLEANING SERVICE	0.025
JANITORS	0.025

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

16 WELDING

NOT LOOKING	0.059
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.059
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.235
OTHER	0.0
PARTICIPATION RATE	0.647
UNEMPLOYMENT RATE	0.091
OPERATIVES & KINDRED	0.727
METAL WORK OPERATIVE	0.545
WELDERS	0.545
OTHER OPERATIVES	0.182
BOTTLING OPER	0.091
MISC OPERATIVES	0.091
LABORERS, NON FARM	0.182
CONSTRL. LABORERS	0.091
MISC LABORERS	0.091

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

16 WELDING

NOT LOOKING	0.0
FULL TIME SCHOOL	0.045
PART TIME SCHOOL	0.045
FULL TIME COLLEGE	0.045
PART TIME COLLEGE	0.0
MILITARY	0.182
OTHER	0.0
PARTICIPATION RATE	0.682
UNEMPLOYMENT RATE	0.067
OPERATIVES & KINDRED	0.867
METAL WORK OPERATIVE	0.667
WELDERS	0.667
OTHER OPERATIVES	0.200
BOTTLING OPER	0.067
MISC OPERATIVES	0.133
SERVICE WORKERS	0.067
PERSONAL SERVICE	0.067
ATTENDANTS,NEC	0.067

17. TRADE AND INDUSTRIAL, OTHER THAN ABOVE

Included under this general program heading are the following trade and industrial programs:

(a) Business Machine and Maintenance
(b) Ceramics
(c) Commercial Foods
(d) Custodial Services
(e) Foundry
(f) Industrial Chemistry
(g) Metal Fabrication
(h) Painting/Decorating
(i) Patternmaker
(j) Power Sewing
(k) Textile Prod. and Fabric
(l) Upholstering
(m) Furniture Refinishing
(n) Other

In 1970, a total of 537 students graduated from these 14 programs. Of those students surveyed, 144 useable returns were received. This represents about 26.8 percent of the total graduates.

As it can be seen in the subsequent tables, the percent of the graduates that continued their education full-time is low for the rest of the state (5.5%) and high for the Pittsburgh LMA (25.9%). This could be due to the varying number in one program or another for the two areas. However, similar patterns have been observed in other individual programs. The percent who entered the military is comparatively low, varying from 7 to 14 percent.

As a result of these two factors, the labor force participation rate is rather high for the rest of the state (83.8%) and comparatively low for Philadelphia and Pittsburgh LMA's at 60 and 55 percent, respectively.

The unemployment rate almost parallels the rate continuing their education. This would appear to confirm that as the unemployment rate goes up, the percent participating in the labor force goes down and a

greater percent of the students continue their education full-time or enter the military.

Because of the variety of these programs, no effort has been made to determine which occupations are directly related to the training. However, it can be said that the Trade and Industrial programs generally do not prepare students for the following fields:

(a) Medical, Other
(b) Sales Workers
(c) Clerical and Kindred
(d) Other Operatives
(e) Service Workers

Assuming this to be true, then 42 and 43 percent respectively from the rest of the state and the Philadelphia LMA found jobs unrelated to their training. For the Pittsburgh LMA it was only 33 percent. However, it must be remembered that the Pittsburgh LMA graduates also had a much higher unemployment rate.

TABLE III

AREA: REST OF STATE

17 T & I,OTHER

NOT LOOKING	0.027
FULL TIME SCHOOL	0.041
PART TIME SCHOOL	0.014
FULL TIME COLLEGE	0.014
PART TIME COLLEGE	0.0
MILITARY	0.068
OTHER	0.0
PARTICIPATION RATE	0.838
UNEMPLOYMENT RATE	0.048
MED & HEALTH TECH	0.032
CLINICAL LAB	0.016
HEALTH TECH,NEC	0.016
MEDICAL,OTHER	0.032
NURSE AIDES,ORDERLY	0.032
SALES WORKERS	0.016
SALESMEN	0.016
CLERICAL & KINDRED	0.161
OFFICE MACH OPER	0.032
COMPUTER OPER	0.016
KEYPUNCH OPER	0.016
SECRETARIES	0.032
SHIP & RECEIVING	0.016
STOCK CLERKS	0.048
TYPISTS	0.016
MISC CLERICAL	0.016
CRAFTSMEN & KINDRED	0.097
CONSTRUCTION CRAFTS	0.048
CARPENTERS	0.032
ROOFERS	0.016
MECH & REPAIRMEN	0.032
AIR COND & REFRIG	0.016
MISC MECH & REPAIR	0.016
OTHER CRAFTSMEN	0.016
BAKERS	0.016
OPERATIVES & KINDRED	0.500
METAL WORK OPERATIVE	0.129
CHECKERS,MFG	0.016
WELDERS	0.016
MISC METAL OPER	0.097
TRANSPORT EQUIP OPER	0.016
DELIVERYMEN	0.016
SEMISKILLED TEXTILE	0.242
DRESSMAKERS	0.032
SEWERS	0.161
TEXTILE OPERATIVES	0.048
CARDING & LAPPING	0.016
TEXTILE OPER NEC	0.032
OTHER OPERATIVES	0.113
ASSEMBLERS	0.016
LAUNDRY OPER	0.016
MILLINERS	0.016
MISC OPERATIVES	0.065
LABORERS,NON FARM	0.016
WAREHOUSEMEN NEC	0.016
SERVICE WORKERS	0.097
FOOD SERVICE	0.097
COOKS	0.016
COUNTER & FOUNTAIN	0.032
WAITERS	0.032
FOOD SERVICE NEC	0.016

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

17 T & I,OTHER

NOT LOOKING	0.020
FULL TIME SCHOOL	0.060
PART TIME SCHOOL	0.040
FULL TIME COLLEGE	0.080
PART TIME COLLEGE	0.040
MILITARY	0.140
OTHER	0.020
PARTICIPATION RATE	0.600
UNEMPLOYMENT RATE	0.167
CLERICAL & KINDRED	0.300
OFFICE MACH OPER	0.100
BOOKKEEPING MACH	0.033
KEYPUNCH OPER	0.067
SECRETARIES	0.033
SHIP & RECEIVING	0.067
STATISTICAL CLERKS	0.033
TELEPHONE OPER	0.033
MISC CLERICAL	0.033
CRAFTSMEN & KINDRED	0.133
CONSTRUCTION CRAFTS	0.033
BRICKMASONS	0.033
MECH & REPAIRMEN	0.100
AUTOMOBILE	0.067
MISC MECH & REPAIR	0.033
OPERATIVES & KINDRED	0.233
METAL WORK OPERATIVE	0.133
FURNACEMEN	0.033
MISC METAL OPER	0.100
TRANSPORT EQUIP OPER	0.033
TRUCK DRIVERS	0.033
SEMISKILLED TEXTILE	0.033
TEXTILE OPERATIVES	0.033
CARDING & LAPPING	0.033
OTHER OPERATIVES	0.033
MISC OPERATIVES	0.033
LABORERS,NON FARM	0.067
FREIGHT HANDLERS	0.033
MISC LABORERS	0.033
SERVICE WORKERS	0.100
FOOD SERVICE	0.100
COOKS	0.033
COUNTER & FOUNTAIN	0.033
FOOD SERVICE NEC	0.033

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

17 T & I,OTHER

NOT LOOKING	0.037
FULL TIME SCHOOL	0.148
PART TIME SCHOOL	0.037
FULL TIME COLLEGE	0.111
PART TIME COLLEGE	0.0
MILITARY	0.111
OTHER	0.0
PARTICIPATION RATE	0.556
UNEMPLOYMENT RATE	0.267
ENGINEERING TECH	0.067
ELEC & ELEC	0.067
CLERICAL & KINDRED	0.067
STOCK CLERKS	0.067
CRAFTSMEN & KINDRED	0.267
MECH & REPAIRMEN	0.200
AUTOMOBILE	0.067
HOUSEHOLD APPL	0.133
PRINTING TRADES	0.067
PRESSMEN	0.067
OPERATIVES & KINDRED	0.200
METAL WORK OPERATIVE	0.067
MISC METAL OPER	0.067
OTHER OPERATIVES	0.133
MISC OPERATIVES	0.133
SERVICE WORKERS	0.133
FOOD SERVICE	0.133
FOOD SERVICE NEC	0.133

18. ARCHITECTURAL

A total of 158 students graduated from the Architectural program in 1970. All of the graduates were surveyed. However, only 20 responded. Therefore, the findings detailed in the accompanying table should not be considered significant.

TABLE III

AREA: REST OF STATE

18 ARCHITECTURAL

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	1.000
UNEMPLOYMENT RATE	0.0
TECH,EXCEPT HEALTH	0.500
DRAFTSMEN	0.375
SURVEYORS	0.125
CLERICAL & KINDRED	0.125
STOCK CLERKS	0.125
CRAFTSMEN & KINDRED	0.125
MECH & REPAIRMEN	0.125
AUTO BODY REPAIR	0.125
OPERATIVES & KINDRED	0.125
METAL WORK OPERATIVE	0.125
MISC METAL OPER	0.125
SERVICE WORKERS	0.125
PERSONAL SERVICE	0.125
ATTENDANTS,NEC	0.125

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

18 ARCHITECTURAL

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	1.000
UNEMPLOYMENT RATE	0.0
ENGINEERING TECH	0.091
ELEC & ELEC	0.091
TECH,EXCEPT HEALTH	0.455
DRAFTSMEN	0.455
CRAFTSMEN & KINDRED	0.091
CONSTRUCTION CRAFTS	0.091
PLUMBERS	0.091
OPERATIVES & KINDRED	0.091
METAL WORK OPERATIVE	0.091
MISC METAL OPER	0.091
LABORERS,NON FARM	0.273
CONSTRL.LABORERS	0.091
FREIGHT HANDLERS	0.182

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

18 ARCHITECTURAL

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	1.000
UNEMPLOYMENT RATE	0.0
TECH,EXCEPT HEALTH	1.000
DESIGNERS	1.000

19. AUTO AND DIESEL TECHNOLOGY

The total number of graduates from the Auto and Diesel Technology program is not known at this time, therefore, the percentage of respondents cannot be determined. In addition, the number of respondents from the rest of the state, and the Philadelphia LMA's for this program is not significant (4 and 1, respectively). Therefore, this analysis will concentrate on graduates from the Pittsburgh LMA.

The accompanying table shows that 22.6 percent of the program graduates continued their education full-time. The vast majority of these students were enrolled in full-time school, as opposed to full-time college. The percent that did not enter the labor market (entered the military) is 29 percent. This figure is approximately three times the average for all programs in the Pittsburgh LMA.

The programs participation rate was 40 percent, which ranks at the eighteenth percentile when compared to the participation rates of graduates for all programs in the Pittsburgh LMA. The unemployment rate of 25 percent is near the median for the Pittsburgh LMA.

Assuming that the occupation, automobile mechanic and repairman is related to this field of study, the findings are that 33 percent of the graduates from this program have found jobs related to their field of study. Implications from these findings are that there is either a limited need for this type of training or that the graduates of this program do not possess the required entry level skills.

Also, if it is assumed that related jobs are basically in the technician field, then it can be seen that no graduates found a related job.

TABLE III

AREA: REST OF STATE

19 AUTO & DIESEL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	1.000
UNEMPLOYMENT RATE	0.0
CLERICAL & KINDRED	0.250
STOCK CLERKS	0.250
CRAFTSMEN & KINDRED	0.250
MECH & REPAIRMEN	0.250
AUTOMOBILE	0.250
LABORERS,NON FARM	0.250
STOCKHANDLERS	0.250
SERVICE WORKERS	0.250
PERSONAL SERVICE	0.250
ATTENDANTS,NEC	0.250

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

19 AUTO & DIESEL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	1.000
UNEMPLOYMENT RATE	0.0
CRAFTSMEN & KINDRED	1.000
MECH & REPAIRMEN	1.000
AUTOMOBILE	1.000

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

19 AUTO & DIESEL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.194
PART TIME SCHOOL	0.032
FULL TIME COLLEGE	0.032
PART TIME COLLEGE	0.065
MILITARY	0.290
OTHER	0.0
PARTICIPATION RATE	0.387
UNEMPLOYMENT RATE	0.250
CRAFTSMEN & KINDRED	0.500
CONSTRUCTION CRAFTS	0.167
CRANESMEN	0.083
EXCAVATING MACH	0.083
MECH & REPAIRMEN	0.333
AUTOMOBILE	0.333
OPERATIVES & KINDRED	0.083
METAL WORK OPERATIVE	0.083
DRILL PRESS	0.083
LATHE & MILLING	0.083
LABORERS,NON FARM	0.083
CONSTRU. LABORERS	0.083
SERVICE WORKERS	0.083
PERSONAL SERVICE	0.083
ATTENDANTS,NEC	0.083

20. CHEMICAL TECHNOLOGY

From a total of 131 graduates surveyed from the Chemical Technology program in the Pennsylvania public secondary schools, 44 useable returns were obtained, which is about 33 percent of the total surveyed. Because of the small number of returns from the Philadelphia LMA graduates, there are some reservations as to significance. They will, however, be included in the discussion.

There was a high percentage of graduates from this program going on to further their education; 75 percent from the rest of the state, about 56 percent from Philadelphia, and 25 percent from the Pittsburgh LMA. It seems that, as in so many other cases, these graduates found it necessary to continue their education in order to obtain employment in their field. This fact explains the low participation rates for the three areas where there were 15 percent of the graduates from the rest of the state, about 37 percent of the Philadelphia graduates, and about 62 percent of the Pittsburgh graduates in the labor market at the time of the survey.

Especially significant is the unemployment rate for the rest of the state in this program, which is 0.0 percent. The reason for this is assumed to be the high percentage of graduates who went on to school or college. The unemployment rates for the Philadelphia and Pittsburgh LMA graduates, however, had a comparatively high unemployment rate of 20 percent for both areas.

Of those graduates who went into the only field assumed to be highly related to their program (Engineering Technology), only the

Philadelphia and Pittsburgh LMA graduates had percentages, 20 percent and 40 percent respectively. All of the other graduates from the three areas found employment in fields assumed to be unrelated to their program:

(a) Operatives and Kindred
(b) Medical, Other
(c) Clerical and Kindred
(d) Service Workers

In these unrelated fields, there were about 67 percent from the rest of the state, 60 percent from Philadelphia and 40 percent from the Pittsburgh LMA.

The apparent inability of graduates from this program to obtain work in their field further demonstrates the necessity for these graduates to continue their education before entering the labor market.

TABLE III

AREA: REST OF STATE

20 CHEMICAL TECH

NOT LOOKING	0.050
FULL TIME SCHOOL	0.150
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.600
PART TIME COLLEGE	0.0
MILITARY	0.050
OTHER	0.0
PARTICIPATION RATE	0.150
UNEMPLOYMENT RATE	0.0
OPERATIVES & KINDRED	0.667
METAL WORK OPERATIVE	0.333
MISC METAL OPER	0.333
OTHER OPERATIVES	0.333
MISC OPERATIVES	0.333
LABORERS,NON FARM	0.333
WAREHOUSEMEN NEC	0.333

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

2C CHEMICAL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.063
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.500
PART TIME COLLEGE	0.0
MILITARY	0.125
OTHER	0.0
PARTICIPATION RATE	0.313
UNEMPLOYMENT RATE	0.200
ENGINEERING TECH	0.200
CHEMICAL	0.200
MEDICAL,OTHER	0.200
NURSE AIDES,ORDERLY	0.200
CLERICAL & KINDRED	0.200
MAIL HANDLERS	0.200
OPERATIVES & KINDRED	0.200
OTHER OPERATIVES	0.200
MISC OPERATIVES	0.200

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

2C CHEMICAL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.250
PART TIME COLLEGE	0.0
MILITARY	0.125
OTHER	0.0
PARTICIPATION RATE	0.625
UNEMPLOYMENT RATE	0.200
ENGINEERING TECH	0.400
CHEMICAL	0.400
SERVICE WORKERS	0.400
FOOD SERVICE	0.400
WAITERS	0.400

21. CIVIL TECHNOLOGY

The useable returns from the graduates of this program numbered 55, which is about 33 percent of the 169 that graduated from this program. The returns from the rest of the state, and Philadelphia LMA's were few in number and an analysis based on such a small return would not be justified, therefore this analysis will concentrate on the graduates of this program in the Pittsburgh LMA.

The accompanying table shows that 32.5 percent of the graduates from this program in the Pittsburgh LMA continued their education full-time. This figure ranks at approximately the sixty-sixth percentile when compared to other programs in the Pittsburgh area. The percent that did not enter the labor market was largely composed of those that entered the military (10%). This figure is just slightly below the 11.7 percent average for the graduates from other programs in the Pittsburgh LMA.

The labor force participation rate for this program is 47.5 percent. This rate ranks at the thirty-third percentile when compared to the participation rates of graduates of all programs in the Pittsburgh LMA. The unemployment rate is 26.3 percent which is near the median for the area.

Assuming that the occupations, Civil Technician and Surveyor are highly related to this field of study, the findings are that no graduates from this program found jobs directly related to their field of study. Implications from these findings are that there is (a) a very

limited need for this type of training, (b) that this program is not providing graduates with entry level skills, or (c) the program is strictly geared toward preparing students for post-secondary training.

In any case, it appears that unless a graduate from this program continues his education, he will not be able to find a job related to his high school training.

TABLE III

AREA: REST OF STATE

21 CIVIL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.077
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.692
PART TIME COLLEGE	0.154
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.077
UNEMPLOYMENT RATE	1.000

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

21 CIVIL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.0
UNEMPLOYMENT RATE	0.0

1

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

21 CIVIL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.125
PART TIME SCHOOL	0.025
FULL TIME COLLEGE	0.200
PART TIME COLLEGE	0.075
MILITARY	0.100
OTHER	0.0
PARTICIPATION RATE	0.475
UNEMPLOYMENT RATE	0.263
TECH,EXCEPT HEALTH	0.105
DRAFTSMEN	0.105
CLERICAL & KINDRED	0.158
MISC CLERICAL	0.158
CRAFTSMEN & KINDRED	0.158
METAL WORK CRAFTS	0.105
SHEET METAL	0.105
MECH & REPAIRMEN	0.053
AUTOMOBILE	0.053
OPERATIVES & KINDRED	0.263
METAL WORK OPERATIVE	0.105
MISC METAL OPER	0.105
OTHER OPERATIVES	0.158
MISC OPERATIVES	0.158
SERVICE WORKERS	0.053
PERSONAL SERVICE	0.053
ATTENDANTS,NEC	0.053

22. COMPUTER PROGRAMMING

It is not known how many students graduated from the Computer Programming programs and no estimate has been made as to what percent of the total the 142 useable returns represent.

Of these graduates, a large percentage went on to full-time school or college, about 52 percent of the graduates from the rest of the state, about 27 percent of the Philadelphia LMA graduates, and about 35 percent of the Pittsburgh LMA graduates.

Apparently because of the high percentage of graduates who continued their education, the participation rates are low for all three areas; about 56 percent for Pittsburgh, about 45 percent for Philadelphia, and about 37 percent for the rest of the state. Interestingly, the unemployment rate for the rest of the state is also quite low, about 7 percent, being affected probably by the percent of graduates continuing their education. The unemployment rates, however, for both Pittsburgh and Philadelphia were high, at 20 percent and about 23 percent, respectively.

A high percentage of the graduates from Philadelphia went into the military, about 14 percent. The rest of the state had 5 percent, and Pittsburgh had the lowest percentage at about 3 percent. This also effects the participation rate to some degree, especially for the Philadelphia graduates.

Not very many of the graduates found employment in the one field assumed to be highly related to their program, Technical, except Health.

In fact, only about 3 percent of the Pittsburgh graduates and about 7 percent of the graduates from the rest of the state did so.

Most of the graduates from all three areas found jobs in the Clerical and Kindred fields, only slightly related to Computer Programming, about 56 percent for Pittsburgh, 80 percent for Philadelphia, and about 73 percent for the rest of the state. It is assumed that jobs in this field were easier to obtain without higher education than the technical jobs.

The rest of the graduates found work in fields assumed to be unrelated to their program:

(a) Operatives and Kindred
(b) Craftsmen and Kindred
(c) Service Workers

Of these, Pittsburgh had about 15 percent and the rest of the state had about 13 percent who did so.

As the percentages indicate, this program enables students who wish to continue their education to be placed in the technical category of fields in which Computer Programming is the possible area of emphasis. Those who did not plan to continue schooling can be found employed in the Clerical occupations to a high degree.

TABLE III

AREA: REST OF STATE

22 COMPUTER PROGRAM

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.050
FULL TIME COLLEGE	0.525
PART TIME COLLEGE	0.0
MILITARY	0.050
OTHER	0.0
PARTICIPATION RATE	0.375
UNEMPLOYMENT RATE	0.067
TECH,EXCEPT HEALTH	0.067
COMPUTER PROGRAMMER	0.067
CLERICAL & KINDRED	0.733
CASHIERS	0.067
BILLING CLERKS	0.067
FILE CLERKS	0.333
OFFICE MACH OPER	0.133
KEYPUNCH OPER	0.067
OFFICE MACH,NEC	0.067
SECRETARIES	0.133
OPERATIVES & KINDRED	0.133
METAL WORK OPERATIVE	0.067
DRILL PRESS	0.067
MACH OPER,NEC	0.067
SEMISKILLED TEXTILE	0.067
SEWERS	0.067

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

22 COMPUTER PROGRAM

NOT LOOKING	0.045
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.273
PART TIME COLLEGE	0.045
MILITARY	0.136
OTHER	0.045
PARTICIPATION RATE	0.455
UNEMPLOYMENT RATE	0.200
CLERICAL & KINDRED	0.800
OFFICE MACH OPER	0.500
KEYPUNCH OPER	0.400
OFFICE MACH,NEC	0.100
SHIP & RECEIVING	0.100
TYPISTS	0.100
MISC CLERICAL	0.100

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

22 COMPUTER PROGRAM

NOT LOOKING	0.0
FULL TIME SCHOOL	0.014
PART TIME SCHOOL	0.029
FULL TIME COLLEGE	0.333
PART TIME COLLEGE	0.029
MILITARY	0.029
OTHER	0.0
PARTICIPATION RATE	0.565
UNEMPLOYMENT RATE	0.231
TECH,EXCEPT HEALTH	0.026
COMPUTER PROGRAMMER	0.026
CLERICAL & KINDRED	0.564
CASHIERS	0.051
BILLING CLERKS	0.026
MAIL HANDLERS	0.026
OFFICE MACH OPER	0.385
KEYPUNCH OPER	0.385
SHIP & RECEIVING	0.051
STOCK CLERKS	0.026
CRAFTSMEN & KINDRED	0.026
MECH & REPAIRMEN	0.026
HEAVY EQUIPMENT	0.026
OPERATIVES & KINDRED	0.051
OTHER OPERATIVES	0.051
MISC OPERATIVES	0.051
LABORERS,NON FARM	0.026
FREIGHT HANDLERS	0.026
SERVICE WORKERS	0.077
FOOD SERVICE	0.026
WAITERS	0.026
PERSONAL SERVICE	0.051
ATTENDANTS,NEC	0.051

23. ELECTRICAL TECHNOLOGY

The useable returns from the graduates of the Electrical Technology program numbered 414, which is about 28 percent of the 1,469 graduates from this program.

The accompanying tables show that 47.1 percent, 51.0 percent, and 45.5 percent respectively of the graduates from the rest of the state, Philadelphia and Pittsburgh LMA's continued their education on a full-time basis. This rather uniform distribution of post-secondary students throughout the state may be attributed to the state-wide network of Commonwealth Campuses and their programs in Electrical Technology.

The percent not entering the labor market for other reasons is 16.4 percent, 8.5 percent, and 13.8 percent respectively for the rest of the state, Philadelphia and Pittsburgh LMA. These numbers are very close to the state-wide average for programs with predominantly male enrollments.

Considering the reasons for not seeking work, the labor force participation rate for these graduates is about 34 percent for all the LMA's. This uniformity is largely due to the balanced distribution, and large number of program graduates continuing their education on a full-time basis.

This programs unemployment rate is higher for the Philadelphia and Pittsburgh LMA's than for the rest of the state. These findings are similar to those for the Drafting Technology program.

Assuming that the occupations, Electronics Technician, Electrician, and Radio and TV Repairman are highly related to this

field of study, then the findings are that 11.2, 25.7, and 25.0 percent respectively of the rest of the state, Philadelphia, and Pittsburgh LMA's found jobs directly related to their field of study. The percentage of graduates finding jobs unrelated to their field of study are for the same areas 77.0, 46.1, and 47.9 percent. Implications from these findings are that the demand for graduates of this program is higher in the Philadelphia and Pittsburgh LMA's than in the rest of the state; however, even in the Philadelphia and Pittsburgh LMA's the demand is low.

TABLE III

AREA: REST OF STATE

23 ELECTRICAL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.138
PART TIME SCHOOL	0.016
FULL TIME COLLEGE	0.333
PART TIME COLLEGE	0.021
MILITARY	0.153
OTHER	0.011
PARTICIPATION RATE	0.328
UNEMPLOYMENT RATE	0.016
ENGINEERING TECH	0.048
ELEC & ELEC	0.048
SALES WORKERS	0.081
ADVERTISING AGENTS	0.016
SALESMEN	0.065
CLERICAL & KINDRED	0.129
BOOKKEEPERS	0.016
INSURANCE EXAM	0.016
STATISTICAL CLERKS	0.016
STOCK CLERKS	0.048
MISC CLERICAL	0.032
CRAFTSMEN & KINDRED	0.226
CONSTRUCTION CRAFTS	0.048
CARPENTERS	0.016
ELECTRICIANS	0.032
METAL WORK CRAFTS	0.016
TOOL & DIE	0.016
MECH & REPAIRMEN	0.129
AIR COND & REFRIG	0.016
AUTO BODY REPAIR	0.016
HEAVY EQUIPMENT	0.016
RADIO & TV	0.032
MISC MECH & REPAIR	0.048
PRINTING TRADES	0.032
PRESSMEN	0.032
OPERATIVES & KINDRED	0.274
CONSTRUCTION OPER	0.032
MISC CONSTRL OPER	0.032
METAL WORK OPERATIVE	0.016
SOLDERERS	0.016
TRANSPORT EQUIP OPER	0.048
DELIVERYMEN	0.048
SEMISKILLED TEXTILE	0.016
TEXTILE OPERATIVES	0.016
WEAVERS	0.016
OTHER OPERATIVES	0.161
ASSEMBLERS	0.016
MISC OPERATIVES	0.145
LABORERS,NON FARM	0.113
CONSTRL.LABORERS	0.016
FREIGHT HANDLERS	0.016
STOCKHANDLERS	0.032
WAREHOUSEMEN NEC	0.032
MISC LABORERS	0.016
FARM WORKERS	0.016
FARM LABOR,PAID	0.016
SERVICE WORKERS	0.097
CLEANING SERVICE	0.032
MAIDS	0.016
JANITORS	0.016
FOOD SERVICE	0.016
FOOD SERVICE NEC	0.016
PERSONAL SERVICE	0.048
ATTENDANTS,NEC	0.048

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

23 ELECTRICAL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.123
PART TIME SCHOOL	0.038
FULL TIME COLLEGE	0.387
PART TIME COLLEGE	0.038
MILITARY	0.085
OTHER	0.0
PARTICIPATION RATE	0.330
UNEMPLOYMENT RATE	0.086
ENGINEERING TECH	0.200
ELEC & ELEC	0.200
SALES WORKERS	0.057
SALESMEN	0.057
CLERICAL & KINDRED	0.143
INSURANCE EXAM	0.029
MAIL CARRIERS, P.O.	0.029
SHIP & RECEIVING	0.057
STOCK CLERKS	0.029
CRAFTSMEN & KINDRED	0.314
CONSTRUCTION CRAFTS	0.086
CRANESMEN	0.029
ELECTRICIANS	0.057
MECH & REPAIRMEN	0.086
AUTOMOBILE	0.029
MISC MECH & REPAIR	0.057
OTHER CRAFTSMEN	0.143
TELEPHONE REPAIR	0.143
OPERATIVES & KINDRED	0.114
CONSTRUCTION OPER	0.029
SAWYERS	0.029
METAL WORK OPERATIVE	0.029
MISC METAL OPER	0.029
OTHER OPERATIVES	0.057
ASSEMBLERS	0.057
LABORERS, NON FARM	0.057
CONSTRU. LABORERS	0.029
FREIGHT HANDLERS	0.029
SERVICE WORKERS	0.029
FOOD SERVICE	0.029
COUNTER & FOUNTAIN	0.029

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

23 ELECTRICAL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.154
PART TIME SCHOOL	0.033
FULL TIME COLLEGE	0.301
PART TIME COLLEGE	0.016
MILITARY	0.138
OTHER	0.0
PARTICIPATION RATE	0.358
UNEMPLOYMENT RATE	0.250
ENGINEERING TECH	0.205
ELEC & ELEC	0.205
MEDICAL,OTHER	0.023
NURSE AIDES,ORDERLY	0.023
SALES WORKERS	0.023
SALESMEN	0.023
CLERICAL & KINDRED	0.068
STOCK CLERKS	0.045
MISC CLERICAL	0.023
CRAFTSMEN & KINDRED	0.205
CONSTRUCTION CRAFTS	0.114
CEMENT FINISHERS	0.023
CRANESMEN	0.023
ELECTRICIANS	0.045
PLUMBERS	0.023
METAL WORK CRAFTS	0.023
MACHINISTS	0.023
OTHER CRAFTSMEN	0.068
BAKERS	0.045
JEWELERS	0.023
OPERATIVES & KINDRED	0.114
METAL WORK OPERATIVE	0.023
MISC METAL OPER	0.023
TRANSPORT EQUIP OPER	0.023
DELIVERYMEN	0.023
OTHER OPERATIVES	0.068
MEAT CUTTER,MFG	0.023
MISC OPERATIVES	0.045
LABORERS,NON FARM	0.023
CONSTRL.LABORERS	0.023
SERVICE WORKERS	0.091
FOOD SERVICE	0.023
COUNTER & FOUNTAIN	0.023
PERSONAL SERVICE	0.068
ATTENDANTS,NEC	0.068

24. MECHANICAL TECHNOLOGY PROGRAMS

A total of 738 students graduate from the Mechanical Technology program in 1970. From this group, 172 useable returns were received. This represents about 26 percent of the total graduates.

From the accompanying tables, it can be seen that 58 and 64 percent respectively of the Philadelphia LMA and Pittsburgh LMA graduates continued their education full-time. But, for the rest of the state, the comparable figure is only 12 percent. On the other hand, the percent of the rest of the state graduates continuing their education on a part-time basis (56.6%) is extremely high. Thus, it appears that for graduates from this program over 60 percent continue their education either on a full-time or part-time basis. The fact that the graduates from the rest of the state continued on a part-time basis could be related to either or both the fact that full-time educational facilities are not as available or the graduates found it difficult to go to school full-time due to lack of finances.

The percent who entered the military is fairly low at 12 percent for the Pittsburgh LMA and 8.3 percent for the Philadelphia LMA. Interestingly, none of the graduates from the rest of the state entered the military.

In general, the labor force participation rate was very low for graduates from this program. This would appear to indicate that although the program is designed to prepare students for work, a major portion of the graduates continue their education. Although the

unemployment rate was low (3.2%) for the rest of the state, the rate is very high for the other two areas. This could be due to the fact that the capable students went on for further education, but the graduates who did not do well in the program went to work. This is borne out by the fact that such a small percentage got jobs related to their field of study.

Of those that did find employment, most of the graduates found jobs in the following areas:

(a) Sales Workers
(b) Clerical and Kindred
(c) Operatives and Kindred
(d) Laborers, Non-farm
(e) Service Workers

Assuming these categories are completely unrelated to the training received, 48.5 and 57.2 percent respectively from the rest of the state and the Philadelphia LMA got unrelated jobs. For the Pittsburgh LMA, about 25 percent did so.

In conclusion, then, the graduates predominantly sought further education and those that did seek jobs found predominantly unrelated jobs and further, experience a high rate of unemployment.

TABLE III

AREA: REST OF STATE

24 MECHANICAL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.111
PART TIME SCHOOL	0.485
FULL TIME COLLEGE	0.010
PART TIME COLLEGE	0.081
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.313
UNEMPLOYMENT RATE	0.032
TECH,EXCEPT HEALTH	0.290
DRAFTSMEN	0.290
SALES WORKERS	0.065
ADVERTISING AGENTS	0.032
SALESMEN	0.032
CLERICAL & KINDRED	0.097
STOCK CLERKS	0.032
MISC CLERICAL	0.065
CRAFTSMEN & KINDRED	0.194
CONSTRUCTION CRAFTS	0.065
CABINETMAKERS	0.032
CARPENTERS	0.032
MECH & REPAIRMEN	0.097
AUTO BODY REPAIR	0.032
AUTOMOBILE	0.032
MISC MECH & REPAIR	0.032
OTHER CRAFTSMEN	0.032
CRAFTSMEN,NEC	0.032
OPERATIVES & KINDRED	0.323
METAL WORK OPERATIVE	0.097
FILERS	0.032
DRILL PRESS	0.065
MACH OPER,NEC	0.032
PUNCH & STAMP PRESS	0.032
TRANSPORT EQUIP OPER	0.032
TRANS OPER NEC	0.032
OTHER OPERATIVES	0.194
ASSEMBLERS	0.032
MISC OPERATIVES	0.161

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

24 MECHANICAL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.125
PART TIME SCHOOL	0.042
FULL TIME COLLEGE	0.458
PART TIME COLLEGE	0.0
MILITARY	0.083
OTHER	0.0
PARTICIPATION RATE	0.292
UNEMPLOYMENT RATE	0.286
CLERICAL & KINDRED	0.429
SHIP & RECEIVING	0.143
STOCK CLERKS	0.143
MISC CLERICAL	0.143
CRAFTSMEN & KINDRED	0.143
OTHER CRAFTSMEN	0.143
TELEPHONE REPAIR	0.143
OPERATIVES & KINDRED	0.143
METAL WORK OPERATIVE	0.143
DRILL PRESS	0.143
MACH OPER,NEC	0.143

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

24 MECHANICAL TECH

NOT LOOKING	0.0
FULL TIME SCHOOL	0.200
PART TIME SCHOOL	0.060
FULL TIME COLLEGE	0.440
PART TIME COLLEGE	0.020
MILITARY	0.120
OTHER	0.0
PARTICIPATION RATE	0.160
UNEMPLOYMENT RATE	0.375
TECH,EXCEPT HEALTH	0.375
DRAFTSMEN	0.375
CLERICAL & KINDRED	0.250
SHIP & RECEIVING	0.125
STOCK CLERKS	0.125

25. SCIENTIFIC DATA PROCESSING

From a total of 667 graduates from the Scientific Data Processing program of the Pennsylvania public secondary schools, 150 useable returns were obtained, which is about 22 percent of the total surveyed.

This program is a quite interesting one in many respects. The percentage of these graduates who continued their education is high for all three areas; about 29 percent for Pittsburgh, 18 percent for Philadelphia, and about 21 percent for the rest of the state. The participation rates were comparatively low; 57 percent for Pittsburgh, about 64 percent for Philadelphia, and about 59 percent for the rest of the state. And the unemployment rates were moderately high for Pittsburgh and the rest of the state, about 17 percent and 12 percent respectively. Philadelphia was low at about 7 percent.

Participation in the military was significant for Philadelphia and the rest of the state where the percentages were about 4 percent and 7 percent respectively.

Although the unemployment rate for the graduates from this program seems to be somewhat lower than others there was a significant lack of graduates who were employed in highly related fields. None of the graduates found employment in the Scientific Data Processing field. They did, however, find slightly related jobs as office machine operators. Pittsburgh had about 42 percent, Philadelphia had 50 percent and the rest of the state had 32 percent. A large percentage of the graduates found work in unrelated fields which are assumed to be:

(a) Sales
(b) Craftsmen and Kindred
(c) Operatives and Kindred
(d) Service Workers
(e) Secretaries
(f) Billing Clerks
(g) Shipping and Receiving Clerks
(h) Stock Clerks
(i) Payroll Clerks
(j) File Clerks
(k) Typists
(l) Misc. Clerical
(m) Laborers

These unrelated positions were held by about 42 percent of the Pittsburgh graduates, about 43 percent of the Philadelphia graduates, and 56 percent of the graduates from the rest of the state.

It seems that these graduates found it impossible to find jobs in their field without, first, continuing their education. Many found it easier to get slightly related jobs, possibly because they did not plan on going back to school.

TABLE III

AREA: REST OF STATE

25 SCIENTIFIC DATA PROC

NOT LOOKING	0.035
FULL TIME SCHOOL	0.035
PART TIME SCHOOL	0.059
FULL TIME COLLEGE	0.176
PART TIME COLLEGE	0.035
MILITARY	0.071
OTHER	0.0
PARTICIPATION RATE	0.588
UNEMPLOYMENT RATE	0.120
SALES WORKERS	0.060
SALESMEN	0.060
CLERICAL & KINDRED	0.420
BILLING CLERKS	0.020
OFFICE MACH OPER	0.320
KEYPUNCH OPER	0.260
OFFICE MACH,NEC	0.060
SECRETARIES	0.020
SHIP & RECEIVING	0.020
MISC CLERICAL	0.040
CRAFTSMEN & KINDRED	0.040
METAL WORK CRAFTS	0.020
MACHINISTS	0.020
MECH & REPAIRMEN	0.020
AUTOMOBILE	0.020
OPERATIVES & KINDRED	0.260
SEMISKILLED TEXTILE	0.120
SEWERS	0.040
TEXTILE OPERATIVES	0.080
KNITTERS	0.040
TEXTILE OPER NEC	0.040
OTHER OPERATIVES	0.140
BOTTLING OPER	0.020
MISC OPERATIVES	0.120
LABORERS,NON FARM	0.020
HORTI & FLORICULT	0.020
SERVICE WORKERS	0.080
FOOD SERVICE	0.060
COOKS	0.020
FOOD SERVICE NEC	0.040
PERSONAL SERVICE	0.020
ATTENDANTS,NEC	0.020

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

25 SCIENTIFIC DATA PROC

NOT LOOKING	0.023
FULL TIME SCHOOL	0.045
PART TIME SCHOOL	0.068
FULL TIME COLLEGE	0.136
PART TIME COLLEGE	0.045
MILITARY	0.045
OTHER	0.0
PARTICIPATION RATE	0.636
UNEMPLOYMENT RATE	0.071
SALES WORKERS	0.036
SALESMEN	0.036
CLERICAL & KINDRED	0.821
BILLING CLERKS	0.036
FILE CLERKS	0.036
OFFICE MACH OPER	0.500
KEYPUNCH OPER	0.429
OFFICE MACH,NEC	0.071
PAYROLL CLERKS	0.071
SECRETARIES	0.071
STOCK CLERKS	0.036
MISC CLERICAL	0.071
CRAFTSMEN & KINDRED	0.036
PRINTING TRADES	0.036
PRESSMEN	0.036
OPERATIVES & KINDRED	0.036
OTHER OPERATIVES	0.036
MISC OPERATIVES	0.036

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

25 SCIENTIFIC DATA PROC

NOT LOOKING	0.048
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.286
PART TIME COLLEGE	0.095
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.571
UNEMPLOYMENT RATE	0.167
SALES WORKERS	0.083
SALESMEN	0.083
CLERICAL & KINDRED	0.583
OFFICE MACH OPER	0.417
KEYPUNCH OPER	0.333
OFFICE MACH,NEC	0.083
TYPISTS	0.167
OPERATIVES & KINDRED	0.167
TRANSPORT EQUIP OPER	0.083
FORK LIFT OPER	0.083
OTHER OPERATIVES	0.083
MISC OPERATIVES	0.083

26. TECHNICAL, OTHER THAN ABOVE

Included under this general program title, are the following programs:

		Number Graduated
(a)	Audio-Visual Communications Technology	23
(b)	Building Construction Technology	--
(c)	Engineering Related Technology	42
(d)	Instrumentation Technology	79
(e)	Metallurgical Technology	42
(f)	Research Laboratory Assistant	14
(g)	Tool and Die Design Technology	--
(h)	Welding Technology	--
	TOTAL	200

Out of the total of 200 graduates from these programs, 88 useable returns were received. This constitutes about 44 percent of the total. In view of the fact that the number of returns was small--26 from the rest of the state, 13 from Philadelphia LMA and 49 from the Pittsburgh LMA, no attempt has been made to generalize the findings to the graduates from these programs.

TABLE III

AREA: REST OF STATE

26 TECHNICAL,OTHER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.077
FULL TIME COLLEGE	0.423
PART TIME COLLEGE	0.077
MILITARY	0.192
OTHER	0.0
PARTICIPATION RATE	0.231
UNEMPLOYMENT RATE	0.0
TECH,EXCEPT HEALTH	0.167
DRAFTSMEN	0.167
CRAFTSMEN & KINDRED	0.167
CONSTRUCTION CRAFTS	0.167
PLUMBERS	0.167
OPERATIVES & KINDRED	0.333
CONSTRUCTION OPER	0.333
MISC CONSTRU OPER	0.333
SERVICE WORKERS	0.333
FOOD SERVICE	0.167
COOKS	0.167
PERSONAL SERVICE	0.167
ATTENDANTS,NEC	0.167

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

26 TECHNICAL,OTHER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.385
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.615
UNEMPLOYMENT RATE	0.125
CLERICAL & KINDRED	0.125
STOCK CLERKS	0.125
CRAFTSMEN & KINDRED	0.125
MECH & REPAIRMEN	0.125
MISC MECH & REPAIR	0.125
OPERATIVES & KINDRED	0.500
METAL WORK OPERATIVE	0.375
MACHINE OPERATIVES	0.125
WELDERS	0.125
MISC METAL OPER	0.125
OTHER OPERATIVES	0.125
PAINTERS,MFG	0.125
SERVICE WORKERS	0.125
FOOD SERVICE	0.125
COOKS	0.125

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

26 TECHNICAL,OTHER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.061
PART TIME SCHOOL	0.061
FULL TIME COLLEGE	0.408
PART TIME COLLEGE	0.020
MILITARY	0.061
OTHER	0.0
PARTICIPATION RATE	0.388
UNEMPLOYMENT RATE	0.421
SALES WORKERS	0.053
SALESMEN	0.053
CLERICAL & KINDRED	0.158
BOOKKEEPERS	0.053
SECRETARIES	0.053
TELEPHONE OPER	0.053
CRAFTSMEN & KINDRED	0.105
CONSTRUCTION CRAFTS	0.053
CARPENTERS	0.053
MECH & REPAIRMEN	0.053
AUTOMOBILE	0.053
OPERATIVES & KINDRED	0.158
METAL WORK OPERATIVE	0.105
WELDERS	0.105
OTHER OPERATIVES	0.053
MISC OPERATIVES	0.053
LABORERS,NON FARM	0.053
CARPENTER HELPERS	0.053
SERVICE WORKERS	0.053
PERSONAL SERVICE	0.053
ATTENDANTS,NEC	0.053

27. HEALTH ASSISTANT

Out of a total of 230 graduates from the Health Assistant program in the Pennsylvania public secondary school system, 113 useable returns were obtained, which is about 49.1 percent of the total graduates. Because of the small number of returns from the Pittsburgh LMA graduates, their return will not be discussed. Also, there should be some reservations as to the validity of the analysis of the Philadelphia LMA returns because of the comparatively small number received.

A large percentage of the graduates from the rest of the state went on to further their education, about 32 percent, whereas 15 percent of the Philadelphia graduates went on to full-time school or college. It seems that it can be assumed from the figure from the rest of the state that continuing education is very important for graduates from this program. For the rest of the state, the participation rate was 45 percent with a high unemployment rate of about 18 percent. Philadelphia graduates show up somewhat better in this respect with a participation rate of 65 percent and an unemployment rate of about 8 percent. A significant percentage of graduates from the rest of the state, about 16 percent were not looking for employment and 10 percent were not looking from the Philadelphia LMA. It is assumed that most of these graduates are women who did not enter the labor force because of marriage or pregnancy.

Few of these graduates were able to get employment in their field of study as can be seen by the percentages; about 36 percent for the rest of the state, and 15.4 percent for the Philadelphia LMA.

It is not certain whether the Clerical and Kindred fields could be related slightly to the Health Assistant program, because respondants who indicated their field as "Secretary" may be Health Records Clerks, etc. Related fields are:

(a) Medical and Health Technology
(b) Medical, Other
(c) Health Records

The clerical fields, therefore, were assumed to be under the category of unrelated as well as Operative and Kindred and Service Workers. About 44 percent of the graduates from the rest of the state got jobs unrelated to their program, and about 85 percent of the graduates from the Philadelphia LMA had the same problem.

From this information, it can be assumed that it is essential for graduates from this program to continue their education in order to obtain employment in their field of emphasis. This fact can be ascertained by the returns from the rest of the state alone, but further data would be helpful in analyzing this program.

TABLE III

AREA: REST OF STATE

27 HEALTH ASSISTANT

NOT LOOKING	0.161
FULL TIME SCHOOL	0.287
PART TIME SCHOOL	0.011
FULL TIME COLLEGE	0.034
PART TIME COLLEGE	0.011
MILITARY	0.046
OTHER	0.0
PARTICIPATION RATE	0.448
UNEMPLOYMENT RATE	0.179
MED & HEALTH TECH	0.205
HEALTH TECH,NEC	0.205
MEDICAL,OTHER	0.128
DENTAL ASSISTANTS	0.103
HEALTH AIDES	0.026
CLERICAL & KINDRED	0.205
HEALTH RECORD	0.026
OFFICE MACH OPER	0.026
OFFICE MACH,NEC	0.026
PROOFREADERS	0.026
SECRETARIES	0.103
MISC CLERICAL	0.026
OPERATIVES & KINDRED	0.256
SEMISKILLED TEXTILE	0.179
PACKERS	0.026
SEWERS	0.077
TEXTILE OPERATIVES	0.077
SPINNERS	0.026
TEXTILE OPER NEC	0.051
OTHER OPERATIVES	0.077
MEAT WRAPPERS	0.026
MISC OPERATIVES	0.051
SERVICE WORKERS	0.026
PERSONAL SERVICE	0.026
ATTENDANTS,NEC	0.026

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

27 HEALTH ASSISTANT

NOT LOOKING	0.100
FULL TIME SCHOOL	0.050
PART TIME SCHOOL	0.050
FULL TIME COLLEGE	0.100
PART TIME COLLEGE	0.050
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.650
UNEMPLOYMENT RATE	0.077
MEDICAL,OTHER	0.154
DENTAL ASSISTANTS	0.154
SALES WORKERS	0.154
SALESMEN	0.154
CLERICAL & KINDRED	0.385
OFFICE MACH OPER	0.077
OFFICE MACH,NEC	0.077
STOCK CLERKS	0.077
TYPISTS	0.077
MISC CLERICAL	0.154
OPERATIVES & KINDRED	0.077
OTHER OPERATIVES	0.077
MISC OPERATIVES	0.077
SERVICE WORKERS	0.154
FOOD SERVICE	0.154
COOKS	0.077
FOOD SERVICE NEC	0.077

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

27 HEALTH ASSISTANT

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.333
PART TIME COLLEGE	0.167
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.500
UNEMPLOYMENT RATE	0.0
MEDICAL,OTHER	0.333
NURSE AIDES,ORDERLY	0.333
CLERICAL & KINDRED	0.667
SECRETARIES	0.667

28. HEALTH, OTHER THAN ABOVE

Under this general program heading, the following programs are included:

(a) Dental Assistant/Hygienist
(b) Dental Laboratory Technician
(c) Medical Assistant
(d) Nurses Aid
(e) Practical Nurse
(f) Other

Inasmuch as the total returns were small (57) no interpretation has been made of the information. Also, it is questionable if the information detailed for these programs is useable to any extent other than for the Philadelphia LMA graduates from which 34 useable returns were received.

TABLE III

AREA: REST OF STATE

28 HEALTH,OTHER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	1.000
UNEMPLOYMENT RATE	0.0
MEDICAL,OTHER	0.250
NURSE AIDES,ORDERLY	0.250
CLERICAL & KINDRED	0.250
SECRETARIES	0.250
OPERATIVES & KINDRED	0.250
OTHER OPERATIVES	0.250
ASSEMBLERS	0.250
SERVICE WORKERS	0.250
FOOD SERVICE	0.250
FOOD SERVICE NEC	0.250

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

28 HEALTH,OTHER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.118
PART TIME SCHOOL	0.059
FULL TIME COLLEGE	0.088
PART TIME COLLEGE	0.059
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.676
UNEMPLOYMENT RATE	0.217
MED & HEALTH TECH	0.087
HEALTH TECH,NEC	0.087
MEDICAL,OTHER	0.478
DENTAL ASSISTANTS	0.348
NURSE AIDES,ORDERLY	0.130
CLERICAL & KINDRED	0.130
BANK TELLERS	0.043
SECRETARIES	0.087
OPERATIVES & KINDRED	0.087
OTHER OPERATIVES	0.087
LAUNDRY OPER	0.043
MISC OPERATIVES	0.043

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

28 HEALTH,OTHER

NOT LOOKING	0.053
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.158
PART TIME COLLEGE	0.0
MILITARY	0.105
OTHER	0.0
PARTICIPATION RATE	0.684
UNEMPLOYMENT RATE	0.385
MEDICAL,OTHER	0.538
DENTAL ASSISTANTS	0.385
NURSE AIDES,ORDERLY	0.154
CLERICAL & KINDRED	0.077
CASHIERS	0.077

29. AGRICULTURE PRODUCTION/GENERAL AGRICULTURE

The useable returns from the graduates of this program numbered 240, which is about 14 percent of the 1,732 that graduated from this program. The returns from the Philadelphia and Pittsburgh LMA's represent only 2 percent of graduates, therefore, the data from these two areas will not be included in the analysis.

The accompanying table shows that 13 percent of the graduates continued their education full-time, ranking at the thirty-seventh percentile when compared to graduates of all programs in the rest of the state. The percent that did not enter the labor market (not looking, military, other) is about 19.5 percent, which ranks at the 62 percentile when compared with graduates of other programs in the rest of the state LMA.

The participation rate for these graduates ranks near the median for all programs in the area, while the unemployment rate of 1.5 percent was the lowest in the rest of the state LMA.

Assuming that the following occupations are related to the field of study:

(a) Farm Manager
(b) Farm Labor, unpaid
(c) Farm Labor, self-employed
(d) Farm Labor, paid
(e) Farm Implement Repair

Then, based on this assumption 56 percent of the program graduates from the rest of the state LMA found work directly related to their field of study. Implications from these findings are that there is a moderate demand for this type of training in the predominantly rural areas of Pennsylvania.

TABLE III

AREA: REST OF STATE

29 AG FROD/GENERAL AG

NOT LOOKING	0.015
FULL TIME SCHOOL	0.019
PART TIME SCHOOL	0.005
FULL TIME COLLEGE	0.112
PART TIME COLLEGE	0.010
MILITARY	0.170
OTHER	0.010
PARTICIPATION RATE	0.660
UNEMPLOYMENT RATE	0.015
CLERICAL & KINDRED	0.022
CRAFTSMEN & KINDRED	0.103
CONSTRUCTION CRAFTS	0.044
CARPENTERS	0.022
MECH & REPAIRMEN	0.051
AUTOMOBILE	0.015
FARM IMPLEMENT	0.015
MISC MECH & REPAIR	0.022
OPERATIVES & KINDRED	0.243
CONSTRUCTION OPER	0.029
MISC CONSTRU OPER	0.029
METAL WORK OPERATIVE	0.074
DRILL PRESS	0.029
MACH OPER,NEC	0.029
WELDERS	0.029
MISC METAL OPER	0.015
TRANSPORT EQUIP OPER	0.022
TRANS OPER NEC	0.015
SEMISKILLED TEXTILE	0.022
TEXTILE OPERATIVES	0.022
OTHER OPERATIVES	0.096
MISC OPERATIVES	0.088
LABORERS,NON FARM	0.022
HORTI & FLORICULT	0.015
FARMERS & ADVISORS	0.015
FARM MANAGERS	0.015
FARM WORKERS	0.529
FARM LABOR,UNPAID	0.051
FARM LABOR,PAID	0.456
FARM LABOR,SELF-EMP	0.022
SERVICE WORKERS	0.029
FOOD SERVICE	0.015
FOOD SERVICE NEC	0.015

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

25 AG PROD/GENERAL AG

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.111
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.684
UNEMPLOYMENT RATE	0.125
CRAFTSMEN & KINDRED	0.125
MECH & REPAIRMEN	0.125
AIR COND & REFRIG	0.125
OPERATIVES & KINDRED	0.250
CONSTRUCTION OPER	0.125
MISC CONSTRU OPER	0.125
OTHER OPERATIVES	0.125
MISC OPERATIVES	0.125
LABORERS,NON FARM	0.125
ANIMAL CARE	0.125
FARM WORKERS	0.375
FARM LABOR,UNPAID	0.125
FARM LABOR,PAID	0.250

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

29 AG PROD/GENERAL AG

NOT LOOKING	0.0
FULL TIME SCHOOL	0.038
PART TIME SCHOOL	0.231
FULL TIME COLLEGE	0.077
PART TIME COLLEGE	0.269
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.385
UNEMPLOYMENT RATE	0.100
CRAFTSMEN & KINDRED	0.100
MECH & REPAIRMEN	0.100
AUTOMOBILE	0.100
OPERATIVES & KINDRED	0.700
METAL WORK OPERATIVE	0.300
DRILL PRESS	0.100
MACH OPER,NEC	0.100
MISC METAL OPER	0.200
OTHER OPERATIVES	0.400
ASSEMBLERS	0.100
MEAT CUTTER,NONMFG	0.100
MISC OPERATIVES	0.200
FARM WORKERS	0.100
FARM LABOR,PAID	0.100

30. AGRICULTURAL MECHANICS

A total of 133 students graduated from the Agricultural Mechanics program in 1970. The useable returns numbered 24, which is about 18 percent of the total surveyed. Based on the fact that the number and percent useable returns were small, the findings detailed in the accompanying tables should not be considered significant. For this reason, no effort was made to further analyze the findings.

TABLE III

AREA: REST OF STATE

3C AG MECHANICS

NOT LOOKING	0.0
FULL TIME SCHOOL	0.091
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.318
PART TIME COLLEGE	0.0
MILITARY	0.136
OTHER	0.0
PARTICIPATION RATE	0.455
UNEMPLOYMENT RATE	0.0
CRAFTSMEN & KINDRED	0.200
CONSTRUCTION CRAFTS	0.100
BRICKMASONS	0.100
MECH & REPAIRMEN	0.100
FARM IMPLEMENT	0.100
OPERATIVES & KINDRED	0.500
CONSTRUCTION OPER	0.100
MISC CONSTRU OPER	0.100
METAL WORK OPERATIVE	0.100
WELDERS	0.100
OTHER OPERATIVES	0.300
MISC OPERATIVES	0.300
FARM WORKERS	0.300
FARM LABOR,UNPAID	0.200
FARM LABOR,PAID	0.100

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

3C AG MECHANICS

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.500
OTHER	0.0
PARTICIPATION RATE	0.500
UNEMPLOYMENT RATE	0.0
LABORERS,NON FARM	1.000
HORTI & FLORICULT	1.000

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

30 AG MECHANICS

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	1.000
UNEMPLOYMENT RATE	0.0
OPERATIVES & KINDRED	1.000
CONSTRUCTION OPER	1.000
MISC CONSTRU OPER	1.000

31. ORNAMENTAL HORTICULTURE

The useable returns from the graduates of the Ornamental Horticulture program numbered 45, which is 30 percent of the 150 that graduated from this program. Because of the small number of respondents from the Pittsburgh LMA (4), only the rest of the state and the Philadelphia LMA's are discussed in this analysis.

The accompanying tables show that 19 percent, and 30 percent respectively from the rest of the state and the Philadelphia LMA's continued their education full-time. This may be related to the fact that there are fewer post-secondary education facilities available in the rest of the state. The percent that did not enter the labor market (not looking, military, other) is approximately 5 percent for both LMA's.

Considering the reasons for not seeking work, the labor force participation rate for these graduates was 67 percent for the rest of the state and 50 percent for the Philadelphia LMA. This difference is largely due to the fact that a lesser number of graduates from the rest of the state continued their education.

This program's unemployment rate was 14.3 percent for the rest of the state, and 20 percent for the Philadelphia area. Both figures represent a percentile ranking of approximately 65 percent in their respective LMA's.

Assuming that the occupations Horticulture, Floriculture, and Nurseryman are highly related to this field of study, the findings are that 43 percent of the rest of the state, and 60 percent of the Philadelphia LMA's found jobs directly related to their field of study. Implications from these findings are that there is a moderate demand for the graduates of this program.

TABLE III

AREA: REST OF STATE

31 ORNAMENTAL HORTICUL

NOT LOOKING	0.048
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.048
FULL TIME COLLEGE	0.190
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.048
PARTICIPATION RATE	0.667
UNEMPLOYMENT RATE	0.143
OPERATIVES & KINDRED	0.143
OTHER OPERATIVES	0.143
MISC OPERATIVES	0.143
LABORERS,NON FARM	0.429
HORTI & FLORICULT	0.286
NURSERYMEN	0.143
FARM WORKERS	0.214
FARM LABOR,PAID	0.214
SERVICE WORKERS	0.071
CLEANING SERVICE	0.071
JANITORS	0.071

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

31 ORNAMENTAL HORTICUL

NOT LOOKING	0.0
FULL TIME SCHOOL	0.100
PART TIME SCHOOL	0.150
FULL TIME COLLEGE	0.200
PART TIME COLLEGE	0.0
MILITARY	0.050
OTHER	0.0
PARTICIPATION RATE	0.500
UNEMPLOYMENT RATE	0.200
CLERICAL & KINDRED	0.100
CASHIERS	0.100
OPERATIVES & KINDRED	0.100
OTHER OPERATIVES	0.100
MISC OPERATIVES	0.100
LABORERS,NON FARM	0.600
HORTI & FLORICULT	0.600

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

31 ORNAMENTAL HORTICUL

NOT LOOKING	0.250
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.250
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.500
UNEMPLOYMENT RATE	1.000

32. AGRICULTURE, OTHER THAN ABOVE

Included under this general program title are the following programs:

		Number of Graduates
(a)	Agricultural Business	Not available
(b)	Agricultural Resources	63
(c)	Forestry/Wildlife	62
(d)	Pre-Professional Agriculture	37
(e)	Turf Management	150
(f)	Other than above	89
	TOTAL	401

All of the 401 graduates from these programs were surveyed. The useable returns numbered 50, which represents about 12.4 percent of the total graduates. In view of the fact that only 6 returns were from the Philadelphia LMA and 13 from the Pittsburgh LMA, the findings should be considered insignificant and no attempt has been made to analyze their findings.

As it can be seen in the table for the rest of the state, about 32 percent continued their education full-time and 16 percent entered the military service. About 42 percent entered the labor market. This percentage is quite low and based on the percent continuing their education, it would appear that these programs are not terminal and assume that the graduates will require further education for a number of the occupations for which these programs prepare students.

Of those that did enter the labor force, about 7.7 percent were unemployed at the time of the survey. Assuming that farm or farm oriented occupations are directly related to the various programs, it can be seen that only a small percent (15.4) had directly related jobs. The major portion (46%) had jobs in the Miscellaneous Operatives Field. From Appendix D, it can be seen that this field includes various jobs such as Laborers, Iron Workers, etc. . . . . If it is assumed that in addition to Operatives and Kindred, Craftsmen and Kindred, and Service Workers are unrelated to the field of study, then it becomes apparent that about 69 percent of those that entered the labor market got jobs unrelated to their field of study.

From these findings, it would appear that unless the graduates continue their education full-time, great difficulties are encountered in finding a job related to their training. Considering the fact that both on the national and state level farming related occupations are declining, it would appear that these findings bear out the fact that there is a low demand for trained persons from these fields of study.

TABLE III

AREA: REST OF STATE

32 AGRICULTURE,OTHER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.065
PART TIME SCHOOL	0.065
FULL TIME COLLEGE	0.258
PART TIME COLLEGE	0.032
MILITARY	0.161
OTHER	0.0
PARTICIPATION RATE	0.419
UNEMPLOYMENT RATE	0.077
SALES WORKERS	0.077
SALESMEN	0.077
CRAFTSMEN & KINDRED	0.154
CONSTRUCTION CRAFTS	0.077
EXCAVATING MACH	0.077
MECH & REPAIRMEN	0.077
AUTOMOBILE	0.077
OPERATIVES & KINDRED	0.462
OTHER OPERATIVES	0.462
MISC OPERATIVES	0.462
FARM WORKERS	0.154
FARM LABOR,PAID	0.154
SERVICE WORKERS	0.077
PERSONAL SERVICE	0.077
ATTENDANTS,NEC	0.077

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

32 AGRICULTURE, OTHER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.500
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.500
UNEMPLOYMENT RATE	0.0
CRAFTSMEN & KINDRED	0.667
CONSTRUCTION CRAFTS	0.333
CARPENTERS	0.333
MECH & REPAIRMEN	0.333
FARM IMPLEMENT	0.333
LABORERS, NON FARM	0.333
ANIMAL CARE	0.333

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

32 AGRICULTURE,OTHER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.385
PART TIME COLLEGE	0.0
MILITARY	0.077
OTHER	0.0
PARTICIPATION RATE	0.538
UNEMPLOYMENT RATE	0.0
SALES WORKERS	0.286
SALESMEN	0.286
CLERICAL & KINDRED	0.143
FILE CLERKS	0.143
OPERATIVES & KINDRED	0.429
CONSTRUCTION OPER	0.286
MISC CONSTRU OPER	0.286
OTHER OPERATIVES	0.143
MEAT CUTTER,NONMFG	0.143
SERVICE WORKERS	0.143
FOOD SERVICE	0.143
COOKS	0.143

33. CHILD CARE

From a total of the 390 graduates from the Child Care program in the Pennsylvania public secondary schools, 128 useable returns were obtained, which is 32.8 percent of the total graduates. Because of the insignificant number of returns obtained from the Philadelphia LMA graduates and the graduates from the rest of the state, only the Pittsburgh LMA graduates will be discussed.

These graduates are characterized by a large percent going on to higher education (44.3%). This is assumed to be a very high percentage of graduates who probably go on for further training in areas such as Teaching, Child Psychology and the like.

The participation rates for graduates in this field is low at about 43 percent with a very high unemployment rate at about 22 percent. It seems that graduates (assumed to be mostly women) in this field have a difficult time finding employment without first furthering their education. These figures show that, perhaps, students in the Child Care program would find many opportunities for placement in college and could, probably, be able to become professionals in their area of emphasis.

The graduates who did not go on to college or full-time school seem to be at a disadvantage. Only 11 percent found employment assumed to be highly related to Child Care as Child Care Workers and Teacher Aides. A very high percentage of about 61 percent obtained employment in fields which were unrelated to their field of study as:

(a) Clerical and Kindred
(b) Sales Workers
(c) Operatives and Kindred
(d) Food Service

This program is assumed to be valuable only to those graduates who plan to further their education. As the percentages indicate, those who do not go on to college, found much difficulty in using their high school education.

TABLE III

AREA: REST OF STATE

33 CHILD CARE

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.600
PART TIME COLLEGE	0.100
MILITARY	0.200
OTHER	0.0
PARTICIPATION RATE	0.100
UNEMPLOYMENT RATE	1.000

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

33 CHILD CARE

NOT LOOKING	0.0
FULL TIME SCHOOL	0.167
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.417
PART TIME COLLEGE	0.0
MILITARY	0.083
OTHER	0.0
PARTICIPATION RATE	0.333
UNEMPLOYMENT RATE	0.250
CLERICAL & KINDRED	0.500
TELEPHONE OPER	0.500
OPERATIVES & KINDRED	0.250
OTHER OPERATIVES	0.250
ASSEMBLERS	0.250

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

33 CHILD CARE

NOT LOOKING	0.047
FULL TIME SCHOOL	0.160
PART TIME SCHOOL	0.057
FULL TIME COLLEGE	0.283
PART TIME COLLEGE	0.019
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.434
UNEMPLOYMENT RATE	0.217
MEDICAL,OTHER	0.087
DENTAL ASSISTANTS	0.022
NURSE AIDES,ORDERLY	0.065
SALES WORKERS	0.174
SALESMEN	0.174
CLERICAL & KINDRED	0.283
BOOKKEEPERS	0.022
CASHIERS	0.043
BILLING CLERKS	0.022
FILE CLERKS	0.022
RECEPTIONISTS	0.022
SECRETARIES	0.022
SHIP & RECEIVING	0.022
TEACHER AIDES	0.022
TELEPHONE OPER	0.043
TYPISTS	0.022
MISC CLERICAL	0.022
OPERATIVES & KINDRED	0.043
OTHER OPERATIVES	0.043
ASSEMBLERS	0.043
SERVICE WORKERS	0.196
FOOD SERVICE	0.109
COUNTER & FOUNTAIN	0.022
WAITERS	0.065
FOOD SERVICE NEC	0.022
PERSONAL SERVICE	0.087
CHILD CARE WORKERS	0.087

34. CLOTHING SERVICES

Out of a total of 286 graduates from the Clothing Services program in the Pennsylvania public secondary schools, 86 useable returns were obtained, which is about 34 percent of the total graduates. Because of the small number of returns from the Philadelphia LMA graduates, they will not be discussed.

A significant number of the graduates went on to further their education. Of the two areas, Pittsburgh LMA graduates had the greatest percentage, about 76 percent and the rest of the state had about 45 percent. The reasons for such a high percentage of these graduates going back to school is twofold as evidenced by further data. First, the participation rate for the rest of the state graduates was 25 percent and about 29 percent for the Pittsburgh graduates. This comparatively low participation rate may indicate an inability for these graduates to obtain work in their field without higher education, or that the graduates could not even find employment unless they first went on for higher education.

Second, the unemployment rate for both areas is inordinately high; about 30 percent for Pittsburgh and 25 percent for the rest of the state. This indicates that, possibly, graduates who did not plan to further their education could not get suitable jobs in their field of study.

On further analysis, we can see that few of the graduates from the two areas were able to find jobs which were highly related to their program. About 27 percent of the Pittsburgh LMA graduates and about 37

percent of the graduates from the rest of the state found related jobs. The rest of the graduates who found employment, got jobs in areas unrelated to their field. Highly related fields are:

(a) Operatives and Kindred

(b) Sales

The fields which are assumed to be unrelated to Clothing Services are:

(a) Service Workers

(b) Clerical and Kindred

(c) Medical, Other

About 36 percent of the Pittsburgh LMA graduates, and about 38 percent of the graduates from the rest of the state found employment in these unrelated fields.

It seems that, for graduates in this program, it was a necessity to continue their education in order to get a job in their field, although it is possible that many of the graduates who went on to college or school, changed their area of emphasis because of the lack of need for people with their particular skills.

TABLE III

AREA: REST OF STATE

34 CLOTHING SERVICES

NOT LOOKING	0.0
FULL TIME SCHOOL	0.152
PART TIME SCHOOL	0.061
FULL TIME COLLEGE	0.303
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.485
UNEMPLOYMENT RATE	0.250
CLERICAL & KINDRED	0.188
OFFICE MACH OPER	0.063
KEYPUNCH OPER	0.063
SHIP & RECEIVING	0.063
MISC CLERICAL	0.063
OPERATIVES & KINDRED	0.375
SEMISKILLED TEXTILE	0.188
SEWERS	0.188
OTHER OPERATIVES	0.188
LAUNDRY OPER	0.063
MISC OPERATIVES	0.125
SERVICE WORKERS	0.188
FOOD SERVICE	0.125
FOOD SERVICE NEC	0.125
PERSONAL SERVICE	0.063
COSMETOLOGISTS	0.063

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

34 CLOTHING SERVICES

NOT LOOKING	0.0
FULL TIME SCHOOL	0.143
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.286
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.571
UNEMPLOYMENT RATE	0.500
CLERICAL & KINDRED	0.500
CASHIERS	0.250
OFFICE MACH OPER	0.250
KEYPUNCH OPER	0.250

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

34 CLOTHING SERVICES

NOT LOOKING	0.0
FULL TIME SCHOOL	0.152
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.609
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.239
UNEMPLOYMENT RATE	0.364
MEDICAL,OTHER	0.091
NURSE AIDES,ORDERLY	0.091
SALES WORKERS	0.182
SALESMEN	0.182
CLERICAL & KINDRED	0.182
FILE CLERKS	0.091
SECRETARIES	0.091
OPERATIVES & KINDRED	0.091
SEMISKILLED TEXTILE	0.091
SEWERS	0.091
SERVICE WORKERS	0.091
FOOD SERVICE	0.091
FOOD SERVICE NEC	0.091

35. FOOD SERVICES

Out of the 805 graduates from the Food Services program in the Pennsylvania public secondary schools, 194 useable returns were obtained, which is about 22.3 percent of the total. Most of the returns were from the Pittsburgh LMA graduates (100).

Over half of the Pittsburgh LMA graduates in the Food Services (52%) went on to full-time school or college. Somewhat less, but a substantial percentage of both the Philadelphia graduates and graduates from the rest of the state went on to further their educations at about 24 percent and 21 percent, respectively.

Assuming that the large percentage of Pittsburgh graduates who continue their education highly influenced the participation rate for that area, it is apparent that the 35 percent figure for participation rate is reasonable. What seems to be a high unemployment rate (29%) indicates that, possibly, it is difficult for these graduates to find employment in their field without higher education.

The situation for the Philadelphia graduates and those from the rest of the state is somewhat different, however. We can see that the Philadelphia graduates have a much higher participation rate at about 58 percent and a very low unemployment rate at about 5 percent. For the rest of the state, the participation rate is highest at about 62 percent and the unemployment rate is also comparatively high at about 13 percent.

The percent not looking for employment is interestingly high for the Philadelphia LMA graduates at about 9 percent, while the rest of the state and Pittsburgh are about 5 percent and 3 percent, respectively.

These percentages are assumed to indicate a large percentage of women coming out of this program who do not enter the labor force because of marriage or pregnancy.

There were a significant number of graduates who went into the military from this program; about 12 percent from Philadelphia, 8 percent from the rest of the state, and 7 percent from Pittsburgh.

In all three areas, it can be seen that comparatively few of the graduates obtained jobs directly related to their field. The only field assumed to be highly related is Food Services. Here, Philadelphia LMA graduates had about 17 percent; Pittsburgh, about 37 percent, and the rest of the state, about 32 percent working in their field of study. Significantly, there were a large number of graduates who found work only in the following unrelated fields:

(a) Clerical and Kindred	(f) Laborers, Non-farm
(b) Medical, Other	(g) Cleaning Services
(c) Sales	(h) Personal Services
(d) Craftsmen and Kindred	(i) Misc. Operatives
(e) Operatives and Kindred	(j) Other Operatives

Assuming these fields to be unrelated to Food Services, about 68 percent of the Pittsburgh LMA graduates, 63 percent of the graduates from the rest of the state, and about 57 percent of the Philadelphia graduates, were employed in these fields.

As this data was only 11 percent of the total surveyed, there should be some reservation as to how significant this analysis is, except for the Pittsburgh LMA graduates who sent in most of the returns.

TABLE III

AREA: REST OF STATE

35 FOOD SERVICES

NOT LOOKING	0.049
FULL TIME SCHOOL	0.082
PART TIME SCHOOL	0.033
FULL TIME COLLEGE	0.131
PART TIME COLLEGE	0.0
MILITARY	0.082
OTHER	0.0
PARTICIPATION RATE	0.623
UNEMPLOYMENT RATE	0.132
MEDICAL,OTHER	0.026
NURSE AIDES,ORDERLY	0.026
SALES WORKERS	0.026
SALESMEN	0.026
CLERICAL & KINDRED	0.105
CASHIERS	0.026
SECRETARIES	0.026
TYPISTS	0.053
CRAFTSMEN & KINDRED	0.026
MECH & REPAIRMEN	0.026
AUTOMOBILE	0.026
OPERATIVES & KINDRED	0.316
TRANSPORT EQUIP OPER	0.026
TRANS OPER NEC	0.026
SEMISKILLED TEXTILE	0.211
SEWERS	0.158
TEXTILE OPERATIVES	0.053
TEXTILE OPER NEC	0.053
OTHER OPERATIVES	0.079
ASSEMBLERS	0.053
MISC OPERATIVES	0.026
LABORERS,NON FARM	0.026
CARPENTER HELPERS	0.026
SERVICE WORKERS	0.342
FOOD SERVICE	0.316
COOKS	0.105
COUNTER & FOUNTAIN	0.053
WAITERS	0.105
FOOD SERVICE NEC	0.053
PERSONAL SERVICE	0.026
CHILD CARE WORKERS	0.026

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

35 FOOD SERVICES

NOT LOOKING	0.061
FULL TIME SCHOOL	0.091
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.152
PART TIME COLLEGE	0.0
MILITARY	0.121
OTHER	0.0
PARTICIPATION RATE	0.576
UNEMPLOYMENT RATE	0.053
CLERICAL & KINDRED	0.105
CASHIERS	0.053
STOCK CLERKS	0.053
CRAFTSMEN & KINDRED	0.053
MECH & REPAIRMEN	0.053
AUTOMOBILE	0.053
OPERATIVES & KINDRED	0.316
METAL WORK OPERATIVE	0.053
DRILL PRESS	0.053
MACH OPER,NEC	0.053
TRANSPORT EQUIP OPER	0.105
TRUCK DRIVERS	0.053
TRANS OPER NEC	0.053
OTHER OPERATIVES	0.158
MEAT CUTTER,MFG	0.053
MISC OPERATIVES	0.105
SERVICE WORKERS	0.474
CLEANING SERVICE	0.105
CLEANERS	0.053
JANITORS	0.053
FOOD SERVICE	0.368
COOKS	0.158
COUNTER & FOUNTAIN	0.053
WAITERS	0.105
FOOD SERVICE NEC	0.053

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

35 FOOD SERVICES

NOT LOOKING	0.030
FULL TIME SCHOOL	0.210
PART TIME SCHOOL	0.020
FULL TIME COLLEGE	0.310
PART TIME COLLEGE	0.0
MILITARY	0.070
OTHER	0.010
PARTICIPATION RATE	0.350
UNEMPLOYMENT RATE	0.286
MEDICAL,OTHER	0.029
NURSE AIDES,ORDERLY	0.029
SALES WORKERS	0.114
SALESMEN	0.114
CLERICAL & KINDRED	0.257
BOOKKEEPERS	0.029
CASHIERS	0.029
OFFICE MACH OPER	0.029
OFFICE MACH,NEC	0.029
SECRETARIES	0.057
TELEPHONE OPER	0.057
TYPISTS	0.029
MISC CLERICAL	0.029
OPERATIVES & KINDRED	0.057
SEMISKILLED TEXTILE	0.029
SEWERS	0.029
OTHER OPERATIVES	0.029
MISC OPERATIVES	0.029
SERVICE WORKERS	0.257
FOOD SERVICE	0.171
COUNTER & FOUNTAIN	0.029
WAITERS	0.057
FOOD SERVICE NEC	0.086
PERSONAL SERVICE	0.086
ATTENDANTS,NEC	0.057
COSMETOLOGISTS	0.029

36. VOCATIONAL HOME ECONOMICS

Information is not available as to how many students graduated from the Vocational Home Economics programs in 1970. Therefore, no estimate has been made as to what percent of the total the 363 useable returns represent. Also, because of the small number of returns from the Philadelphia LMA graduates, those results will not be discussed in this analysis.

A significantly large percentage of graduates from this program went on to further their education. Pittsburgh had about 32 percent and the rest of the state, about 39 percent. As for why these graduates found it necessary to go back to school, it is easy to ascertain--50 percent of the Pittsburgh graduates, and about 30 percent of the graduates from the rest of the state were unemployed. The participation rate for the two LMA's was comparatively low as well, with Pittsburgh at about 52 percent and the rest of the state at about 47 percent.

The reason for these highly significant percentages can be seen when the catagories for related and unrelated jobs are studied. There is some doubt as for what occupation or occupations this program prepares its students. We find that about 8 percent of the graduates from the rest of the state and 3 percent of the Pittsburgh graduates did not even seek employment, and of those who apparently did, about 63 percent of the graduates from the rest of the state and about 38 percent of the Pittsburgh LMA graduates got jobs unrelated to their field of study.

It is assumed that the only field that is highly related to this program is Sales. It may be that the 8 percent of the graduates from the rest of the state and the 3 percent from Pittsburgh were working in Home Furnishings Sales. Apparently none were working as Interior Decorators, which is the only other related field that could be ascertained.

The basic problem hindering the analyses of this program is an inability to find out what this program does in preparing its students for occupations. Hindered somewhat by mostly insufficient data (except from graduates from the rest of the state) it is with reservation that this analysis is submitted, although from the percentages obtained by the 280 returns from the graduates from the rest of the state, the data may be considered to be significant.

TABLE III

AREA: REST OF STATE

36 YOC HOME ECON

NOT LOOKING	0.083
FULL TIME SCHOOL	0.158
PART TIME SCHOOL	0.007
FULL TIME COLLEGE	0.237
PART TIME COLLEGE	0.004
MILITARY	0.018
OTHER	0.018
PARTICIPATION RATE	0.475
UNEMPLOYMENT RATE	0.288
SALES WORKERS	0.076
SALESMEN	0.076
CLERICAL & KINDRED	0.250
BANK TELLERS	0.015
CASHIERS	0.015
OFFICE MACH OPER	0.015
KEYPUNCH OPER	0.015
RECEPTIONISTS	0.015
SECRETARIES	0.068
TELEPHONE OPER	0.023
TYPISTS	0.015
MISC CLERICAL	0.038
CRAFTSMEN & KINDRED	0.015
OTHER CRAFTSMEN	0.015
OPERATIVES & KINDRED	0.303
SEMISKILLED TEXTILE	0.159
SEWERS	0.106
TEXTILE OPERATIVES	0.053
TEXTILE OPER NEC	0.053
OTHER OPERATIVES	0.136
LAUNDRY OPER	0.030
MISC OPERATIVES	0.091
SERVICE WORKERS	0.061
FOOD SERVICE	0.045
WAITERS	0.030
PERSONAL SERVICE	0.015
COSMETOLOGISTS	0.015

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

36 YOU HOME ECON

NOT LOOKING	0.150
FULL TIME SCHOOL	0.050
PART TIME SCHOOL	0.050
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.750
UNEMPLOYMENT RATE	0.600
CLERICAL & KINDRED	0.067
SHIP & RECEIVING	0.067
OPERATIVES & KINDRED	0.133
OTHER OPERATIVES	0.133
ASSEMBLERS	0.067
LAUNDRY OPER	0.067
SERVICE WORKERS	0.200
FOOD SERVICE	0.200
WAITERS	0.067
FOOD SERVICE NEC	0.133

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

36 YOC HOME ECON

NOT LOOKING	0.031
FULL TIME SCHOOL	0.169
PART TIME SCHOOL	0.031
FULL TIME COLLEGE	0.154
PART TIME COLLEGE	0.015
MILITARY	0.062
OTHER	0.015
PARTICIPATION RATE	0.523
UNEMPLOYMENT RATE	0.500
MEDICAL,OTHER	0.088
NURSE AIDES,ORDERLY	0.088
SALES WORKERS	0.029
SALESMEN	0.029
CLERICAL & KINDRED	0.147
CASHIERS	0.059
MAIL HANDLERS	0.029
SECRETARIES	0.029
TYPISTS	0.029
OPERATIVES & KINDRED	0.176
SEMISKILLED TEXTILE	0.029
SEWERS	0.029
OTHER OPERATIVES	0.147
MISC OPERATIVES	0.147
SERVICE WORKERS	0.059
FOOD SERVICE	0.059
WAITERS	0.029
FOOD SERVICE NEC	0.029

37. GAINFUL HOME ECONOMICS, OTHER THAN ABOVE

Included under this general program title are the following specific programs:

(a) Home Furnishings
(b) Institutional/Home Management
(c) Other

From these programs 433 students graduated in 1970. The useable returns received numbered 144, which is about 33.3 percent of the total graduates. Because only 15 useable returns were received from the graduates from the Philadelphia LMA, the findings were not analyzed and should be considered insignificant.

As it can be seen in the accompanying tables, about 9.3 percent of the rest of the state graduates did not look for work. This is the second highest rate for all programs in this area. In the Pittsburgh LMA, on the other hand, the percent not looking was only 2.6 percent. The percent continuing their education is quite high at 35.2 percent and 51.3 percent respectively for the rest of the state and the Pittsburgh LMA. These percentages are quite high, indicating that the curriculum is oriented toward preparing the students to continue their education.

About 43 and 54 percent respectively entered the labor force from the Pittsburgh LMA and the rest of the state, which is roughly comparable to that seen for the graduates from the other Gainful Home Economics programs. The unemployment rates ranged from 18 to 24 percent. These are high in comparison to other programs.

Assuming that jobs in the Sales, Clerical and Service areas are related to the field of study, it can be stated that about 31 and 67

percent respectively from the rest of the state and the Pittsburgh LMA found related jobs. The percent for the rest of the state is extremely low and it is doubtful if the high unemployment rate can account for this by itself. Also, the percent that found unrelated jobs is quite high for that area at about 41 percent.

These findings indicate that although a large percent of the graduates did not enter the labor force, the unemployment rate is high for this group and they had difficulty finding jobs related to their field of training. The situation would probably look much worse if it were assumed that related jobs are only those found in the general categories of Sales and Service.

TABLE III

AREA: REST OF STATE

37 GAINFUL HOME EC,OTHER

NOT LOOKING	0.093
FULL TIME SCHOOL	0.167
PART TIME SCHOOL	0.019
FULL TIME COLLEGE	0.185
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.537
UNEMPLOYMENT RATE	0.241
MEDICAL,OTHER	0.034
NURSE AIDES,ORDERLY	0.034
SALES WORKERS	0.034
SALESMEN	0.034
CLERICAL & KINDRED	0.103
CASHIERS	0.034
MAIL HANDLERS	0.034
STOCK CLERKS	0.034
CRAFTSMEN & KINDRED	0.034
OTHER CRAFTSMEN	0.034
TAILORS,FACTORY	0.034
OPERATIVES & KINDRED	0.345
SEMISKILLED TEXTILE	0.103
SEWERS	0.103
OTHER OPERATIVES	0.241
LAUNDRY OPER	0.069
MEAT CUTTER,NONMFG	0.034
PAINTERS,MFG	0.034
MISC OPERATIVES	0.103
LABORERS,NON FARM	0.034
HORTI & FLORICULT	0.034
SERVICE WORKERS	0.172
FOOD SERVICE	0.103
WAITERS	0.103
PERSONAL SERVICE	0.069
ATTENDANTS,NEC.	0.034
CHILD CARE WORKERS	0.034

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

37 GAINFUL HOME EC,OTHER

NOT LOOKING	0.0
FULL TIME SCHOOL	0.067
PART TIME SCHOOL	0.133
FULL TIME COLLEGE	0.133
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.667
UNEMPLOYMENT RATE	0.200
SALES WORKERS	0.200
SALESMEN	0.200
CLERICAL & KINDRED	0.400
BOOKKEEPERS	0.100
OFFICE MACH OPER	0.100
KEYPUNCH OPER	0.100
TELEPHONE OPER	0.100
TYPISTS	0.100
SERVICE WORKERS	0.200
FOOD SERVICE	0.100
WAITERS	0.100
PERSONAL SERVICE	0.100
PERSONAL SERV NEC	0.100

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

37 GAINFUL HOME EC,OTHER

NOT LOOKING	0.026
FULL TIME SCHOOL	0.092
PART TIME SCHOOL	0.013
FULL TIME COLLEGE	0.421
PART TIME COLLEGE	0.013
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.434
UNEMPLOYMENT RATE	0.182
MEDICAL,OTHER	0.091
NURSE AIDES,ORDERLY	0.091
SALES WORKERS	0.212
SALESMEN	0.212
CLERICAL & KINDRED	0.273
CASHIERS	0.030
RECEPTIONISTS	0.030
SECRETARIES	0.091
STOCK CLERKS	0.030
MISC CLERICAL	0.091
CRAFTSMEN & KINDRED	0.030
OTHER CRAFTSMEN	0.030
DECORATORS	0.030
OPERATIVES & KINDRED	0.030
SEMISKILLED TEXTILE	0.030
SEWERS	0.030
SERVICE WORKERS	0.182
CLEANING SERVICE	0.030
MAIDS	0.030
FOOD SERVICE	0.091
COUNTER & FOUNTAIN	0.030
WAITERS	0.030
FOOD SERVICE NEC	0.030
PERSONAL SERVICE	0.061
CHILD CARE WORKERS	0.030
COSMETOLOGISTS	0.030

38. ACCOUNTING/BOOKKEEPING

The follow-up survey sampled 10 percent of the just over 6,153 graduates from the Accounting/Bookkeeping programs in Pennsylvania. The useable returns analyzed numbered 367, which is about 59.6 percent of the total surveyed.

The accompanying tables show that 26 and 33 percent respectively of the graduates from the Philadelphia and Pittsburgh LMA's continued their education full-time whereas only 19 percent did so for the remainder of the state. The percent not entering the labor market (not looking for work, entering the military, and other) is about nine percent. This figure for the rest of the state is about 14 percent.

Taking into consideration the reasons for not seeking work, the labor force participation rate for these graduates is about 54 percent for the Philadelphia and Pittsburgh LMA's and 60 percent for the rest of the state. This difference is largely due to the fact that a lesser percent of the graduates from the rest of the state are continuing their education. This may be related to the fact that there are fewer post-secondary education facilities available in the rest of the state.

This program's unemployment rate for the Philadelphia and Pittsburgh LMA's is lower than that for all other business related curriculums with exception of the Stenographic/Secretarial programs. This may indicate that the graduates are obtaining training that permits a viable penetration into the labor market. However, for the rest of the state, the unemployment rate for this curriculum is the second highest of all

business programs. A partial explanation may be related to the fact that the general unemployment rate for that area was higher in 1970 than for the other LMA's.

An investigation of the occupations entered by the Accounting/Bookkeeping program graduates reveals that about 75 percent in the Philadelphia and Pittsburgh LMA's have jobs in the clerical field but this rate is only 60 percent for the rest of the state. Assuming that the occupations related to the field of study are as follows:

(a) Bank Tellers	(e) Insurance Examiner
(b) Billing Clerks	(f) Office Machine Operators
(c) Bookkeepers	(g) Payroll Clerks
(d) Cashiers	(h) Statistical Clerks

Then, based on this assumption only 6.1 percent of the rest of the state graduates, 21.9 percent of the Philadelphia LMA graduates and 28.0 percent of the Pittsburgh LMA graduates found jobs directly related to their field of study.

Interestingly, 23.4 percent of the graduates of the Philadelphia LMA found jobs in the secretarial, stenographic and typing areas and about 30 percent did so for the other two LMA's. This information points out that the Accounting/Bookkeeping graduates are, on the whole, obtaining jobs only slightly related or completely unrelated to their secondary school programs. Implications from these findings are that there is either a limited need for this type of training or that the training in this program is much more generalized than the program title appears to imply.

TABLE III

AREA: REST OF STATE

38 ACCOUNTING/BOOKKEEPING

NOT LOOKING	0.083
FULL TIME SCHOOL	0.055
PART TIME SCHOOL	0.018
FULL TIME COLLEGE	0.138
PART TIME COLLEGE	0.055
MILITARY	0.028
OTHER	0.028
PARTICIPATION RATE	0.596
UNEMPLOYMENT RATE	0.185
MEDICAL,OTHER	0.015
DENTAL ASSISTANTS	0.015
SALES WORKERS	0.015
DEMONSTRATORS	0.015
CLERICAL & KINDRED	0.600
FILE CLERKS	0.046
OFFICE MACH OPER	0.046
KEYPUNCH OPER	0.015
OFFICE MACH,NEC	0.031
PAYROLL CLERKS	0.015
PROOFREADERS	0.015
RECEPTIONISTS	0.015
SECRETARIES	0.215
SHIP & RECEIVING	0.015
STENOGRAPHERS	0.046
STOCK CLERKS	0.031
TELEPHONE OPER	0.015
TYPISTS	0.046
MISC CLERICAL	0.092
CRAFTSMEN & KINDRED	0.031
METAL WORK CRAFTS	0.015
BLACKSMITHS	0.015
OTHER CRAFTSMEN	0.015
DECORATORS	0.015
OPERATIVES & KINDRED	0.062
METAL WORK OPERATIVE	0.031
MISC METAL OPER	0.031
SEMISKILLED TEXTILE	0.015
TEXTILE OPERATIVES	0.015
TEXTILE OPER NEC	0.015
OTHER OPERATIVES	0.015
MISC OPERATIVES	0.015
LABORERS,NON FARM	0.031
WAREHOUSEMEN NEC	0.031
SERVICE WORKERS	0.062
FOOD SERVICE	0.062
COOKS	0.031
WAITERS	0.031

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

38 ACCOUNTING/BOOKKEEPING

NOT LOOKING	0.017
FULL TIME SCHOOL	0.068
PART TIME SCHOOL	0.076
FULL TIME COLLEGE	0.195
PART TIME COLLEGE	0.034
MILITARY	0.051
OTHER	0.017
PARTICIPATION RATE	0.542
UNEMPLOYMENT RATE	0.125
MEDICAL,OTHER	0.016
NURSE AIDES,ORDERLY	0.016
CLERICAL & KINDRED	0.750
BOOKKEEPERS	0.047
CASHIERS	0.016
BILLING CLERKS	0.078
FILE CLERKS	0.031
MAIL HANDLERS	0.094
OFFICE MACH OPER	0.031
KEYPUNCH OPER	0.031
PAYROLL CLERKS	0.031
PROOFREADERS	0.015
RECEPTIONISTS	0.01[illegible]
SECRETARIES	0.109
SHIP & RECEIVING	0.016
STATISTICAL CLERKS	0.015
STENOGRAPHERS	0.016
STOCK CLERKS	0.047
TEACHER AIDES	0.016
TELEGRAPH OPER	0.016
TYPISTS	0.109
MISC CLERICAL	0.047
CRAFTSMEN & KINDRED	0.047
CONSTRUCTION CRAFTS	0.031
CARPENTERS	0.016
PLUMBERS	0.016
OTHER CRAFTSMEN	0.016
DECORATORS	0.016
OPERATIVES & KINDRED	0.031
OTHER OPERATIVES	0.031
MISC OPERATIVES	0.031
LABORERS,NON FARM	0.016
HORTI & FLORICULT	0.016
SERVICE WORKERS	0.016
PERSONAL SERVICE	0.016
ATTENDANTS,NEC	0.016

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

38 ACCOUNTING/BOOKKEEPING

NOT LOOKING	0.043
FULL TIME SCHOOL	0.158
PART TIME SCHOOL	0.022
FULL TIME COLLEGE	0.173
PART TIME COLLEGE	0.022
MILITARY	0.029
OTHER	0.014
PARTICIPATION RATE	0.540
UNEMPLOYMENT RATE	0.200
SALES WORKERS	0.013
SALESMEN	0.013
CLERICAL & KINDRED	0.760
BANK TELLERS	0.027
BOOKKEEPERS	0.107
CASHIERS	0.027
BILLING CLERKS	0.080
INSURANCE EXAM	0.013
MAIL HANDLERS	0.053
OFFICE MACH OPER	0.013
BOOKKEEPING MACH	0.013
SECRETARIES	0.187
SHIP & RECEIVING	0.013
STATISTICAL CLERKS	0.013
STENOGRAPHERS	0.053
STOCK CLERKS	0.013
TELEPHONE OPER	0.053
TYPISTS	0.053
MISC CLERICAL	0.053
OPERATIVES & KINDRED	0.013
OTHER OPERATIVES	0.013
MISC OPERATIVES	0.013
SERVICE WORKERS	0.013
FOOD SERVICE	0.013
FOOD SERVICE NEC	0.013

39. CLERK/TYPIST

From 10 percent of a combined total of 17,339 graduates surveyed from the Clerk/Typist and the General Clerical and Office Practice programs, 254 useable returns were obtained, which is about 41 percent of the total surveyed.

A small percentage of the graduates from this program continued their education from the Philadelphia LMA and the rest of the state, about 9 percent and about 4 percent respectively. Philadelphia had somewhat more, about 17 percent.

The participation rate for the rest of the state was high, about 89 percent. Philadelphia and Pittsburgh LMA graduates had somewhat less at about 74 percent and about 68 percent respectively. Unemployment rates for the Pittsburgh and Philadelphia LMA's were quite high compared to the rest of the state which was about 11 percent where Philadelphia had about 28 percent and Pittsburgh about 40 percent.

Looking at the job categories of highly related to unrelated, we can see that of the graduates who found work, few got jobs that were highly related to their program. Fields assumed to be highly related to Clerk/Typist are:

(a) Bank Tellers
(b) Billing Clerks
(c) File Clerks
(d) Payroll Clerks
(e) Postal Clerks
(f) Stock Clerks
(g) Health Record Clerk
(h) Typists
(i) Statistical Clerk
(j) Misc. Clerical

In this category, 21 percent of the Pittsburgh graduates, 34 percent of the Philadelphia graduates and 17 percent of the graduates from the rest of the state obtained employment.

About as many found other jobs in the Clerical and Kindred fields that are assumed to be slightly related:

(a) Cashiers
(b) Mail Handler
(c) Receptionists
(d) Secretary
(e) Telephone Operator
(f) Office Machine Operators
(g) Bill Collectors

Seventeen percent of the Philadelphia graduates, about 22 percent of the Pittsburgh graduates and about 38 percent of the graduates from the rest of the state found employment in this category.

The remainder of the graduates found jobs in fields unrelated to their program:

(a) Medical, Other
(b) Operatives and Kindred
(c) Craftsmen and Kindred
(d) Service Workers
(e) Sales

A high percentage of the graduates from the rest of the state, about 34 percent got jobs which were unrelated to their field of study. As indicated above, these graduates also had a high percentage of jobs in slightly related fields and a minimum of jobs in highly related fields. Philadelphia and Pittsburgh had much less, about 10 percent and 16 percent respectively.

If we consider the high unemployment rates for Philadelphia and Pittsburgh and the low percentages of graduates from these areas who obtained highly related jobs, we can assume that

(1) It was difficult to obtain employment in these areas, and

(2) it was difficult to get jobs in highly related fields for these graduates.

Possibly, there were too many graduates from this program and not enough need for people with their skills.

TABLE III

AREA: REST OF STATE

39 CLERK-TYPIST

NOT LOOKING	0.019
FULL TIME SCHOOL	0.019
PART TIME SCHOOL	0.038
FULL TIME COLLEGE	0.019
PART TIME COLLEGE	0.0
MILITARY	0.019
OTHER	0.0
PARTICIPATION RATE	0.987
UNEMPLOYMENT RATE	0.106
SALES WORKERS	0.128
DEMONSTRATORS	0.021
SALESMEN	0.106
CLERICAL & KINDRED	0.553
CASHIERS	0.064
BILLING CLERKS	0.085
MAIL HANDLERS	0.043
PAYROLL CLERKS	0.021
RECEPTIONISTS	0.021
SECRETARIES	0.106
TELEPHONE OPER	0.149
MISC CLERICAL	0.064
CRAFTSMEN & KINDRED	0.043
OTHER CRAFTSMEN	0.043
BAKERS	0.043
OPERATIVES & KINDRED	0.064
OTHER OPERATIVES	0.064
ASSEMBLERS	0.021
MEAT WRAPPERS	0.021
PHOTO PROCESS WORK	0.021
SERVICE WORKERS	0.106
CLEANING SERVICE	0.021
BOARD & LODGING	0.021
FOOD SERVICE	0.043
COUNTER & FOUNTAIN	0.043
PERSONAL SERVICE	0.043
ATTENDANTS,NEC	0.021
COSMETOLOGISTS	0.021

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

39 CLERK-TYPIST

NOT LOOKING	0.039
FULL TIME SCHOOL	0.039
PART TIME SCHOOL	0.087
FULL TIME COLLEGE	0.049
PART TIME COLLEGE	0.010
MILITARY	0.019
OTHER	0.019
PARTICIPATION RATE	0.738
UNEMPLOYMENT RATE	0.276
MEDICAL,OTHER	0.013
NURSE AIDES,ORDERLY	0.013
SALES WORKERS	0.013
SALESMEN	0.013
CLERICAL & KINDRED	0.618
BANK TELLERS	0.026
BILLING CLERKS	0.013
COLLECTORS, BILL	0.013
ESTIMATORS	0.013
FILE CLERKS	0.039
OFFICE MACH OPER	0.039
BOOKKEEPING MACH	0.013
KEYPUNCH OPER	0.013
OFFICE MACH,NEC	0.013
POSTAL CLERKS	0.013
SECRETARIES	0.118
SHIP & RECEIVING	0.026
STATISTICAL CLERKS	0.013
STENOGRAPHERS	0.013
STOCK CLERKS	0.026
TELEPHONE OPER	0.013
TYPISTS	0.197
MISC CLERICAL	0.053
OPERATIVES & KINDRED	0.026
OTHER OPERATIVES	0.026
MISC OPERATIVES	0.026
SERVICE WORKERS	0.053
CLEANING SERVICE	0.013
JANITORS	0.013
FOOD SERVICE	0.039
COUNTER & FOUNTAIN	0.026
WAITERS	0.013

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

39 CLERK-TYPIST

NOT LOOKING	0.031
FULL TIME SCHOOL	0.061
PART TIME SCHOOL	0.071
FULL TIME COLLEGE	0.112
PART TIME COLLEGE	0.020
MILITARY	0.020
OTHER	0.0
PARTICIPATION RATE	0.684
UNEMPLOYMENT RATE	0.403
MEDICAL,OTHER	0.015
NURSE AIDES,ORDERLY	0.015
SALES WORKERS	0.090
SALESMEN	0.090
CLERICAL & KINDRED	0.418
BANK TELLERS	0.030
CASHIERS	0.015
FILE CLERKS	0.045
HEALTH RECORD	0.015
MAIL HANDLERS	0.015
RECEPTIONISTS	0.030
SECRETARIES	0.134
STOCK CLERKS	0.015
TELEPHONE OPER	0.015
TYPISTS	0.090
MISC CLERICAL	0.015
OPERATIVES & KINDRED	0.030
OTHER OPERATIVES	0.030
ASSEMBLERS	0.015
MISC OPERATIVES	0.015
SERVICE WORKERS	0.045
FOOD SERVICE	0.030
WAITERS	0.030
PERSONAL SERVICE	0.015
CHILD CARE WORKERS	0.015

40. DATA PROCESSING PROGRAMS

The follow-up survey sampled 10 percent of the 1,858 graduates from the Data Processing programs in Pennsylvania public secondary schools. The useable returns analyzed numbered 105, which is about 56.4 percent of the total surveyed.

As the tables indicate, 19 percent of the graduates from the Philadelphia LMA, 23.5 percent of the graduates from the Pittsburgh LMA, and 24 percent of the graduates from the rest of the state continued their education. This high percentage of graduates continuing their education ranks about sixteenth in relation to all other programs in which many graduates go on to higher education.

The labor force participation rate for the rest of the state is lower, at 56 percent, than those of Philadelphia, at about 71 percent, and Pittsburgh at about 77 percent. Interestingly, although the participation rate is highest for Pittsburgh, the unemployment rate is also the highest of the three areas for this program at 23 percent. Philadelphia is the lowest at 13 percent, and the percentage for the rest of the state is about 18 percent.

Then it can be seen that only 27 percent of the Pittsburgh LMA graduates have jobs related to their program. Philadelphia graduates have the highest percentage of related jobs, about 47 percent, and the percentage for the rest of the state is about 36 percent.

If it is assumed that the related occupations for graduates from this program are:

(a) Bookkeeping Machine Operators
(b) Computer Operators
(c) Duplicating Machine Operators
(d) Keypunch Operators
(e) Office Machine Operators, N.E.C.

As the tables indicate, the graduates from this program tend to obtain jobs in areas slightly related or unrelated to their field of study, showing that there is either a limited need for this type of training or the graduates are unprepared to obtain a job in their field of study.

If it assumed that completely unrelated fields to the Data Processing program are:

(a) Nurse Aides and Orderlies
(b) Air Conditioning and Refrigeration Repair
(c) Welders
(d) Sewers
(e) Other Operatives
(f) Sales Workers
(g) Printing Trades
(h) Food Service Workers

Thus it becomes apparent that 28.6 percent of the graduates from the rest of the state were employed in occupations completely unrelated to their field. Of the Philadelphia graduates, 13.4 percent had unrelated jobs and 23 percent of Pittsburgh graduates found work in completely unrelated fields.

Somewhat more of the graduates went into fields that are assumed to be only slightly related to their field of study. These are among the Clerical and Kindred heading:

(a) Payroll Clerks
(b) Shipping and Receiving
(c) Library Attendants
(d) Mail Handlers
(e) File Clerks
(f) Cashiers
(g) Secretaries
(h) Typists
(j) Stock Clerks
(k) Billing Clerks
(l) Telephone Operators

Taking this into consideration, we see that 25 percent of the graduates from the rest of the state, 26.8 percent of the graduates from the Philadelphia LMA, and about 23 percent of the Pittsburgh LMA graduates had jobs only slightly related to their field of study.

For the most part then, few of the graduates obtained employment in fields completely related to the field studies in high school.

TABLE III

AREA: REST OF STATE

4C DATA PROCESSING

NOT LOOKING	0.0
FULL TIME SCHOOL	0.100
PART TIME SCHOOL	0.140
FULL TIME COLLEGE	0.140
PART TIME COLLEGE	0.060
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.560
UNEMPLOYMENT RATE	0.179
MEDICAL,OTHER	0.036
NURSE AIDES,ORDERLY	0.036
CLERICAL & KINDRED	0.607
BILLING CLERKS	0.071
LIBRARY ATTEND	0.036
MAIL HANDLERS	0.036
OFFICE MACH OPER	0.357
COMPUTER OPER	0.036
KEYPUNCH OPER	0.286
OFFICE MACH,MISC	0.036
SECRETARIES	0.036
TELEPHONE OPER	0.071
CRAFTSMEN & KINDRED	0.036
MECH & REPAIRMEN	0.036
AIR COND & REFRIG	0.036
OPERATIVES & KINDRED	0.143
METAL WORK OPERATIVE	0.036
WELDERS	0.036
SEMISKILLED TEXTILE	0.036
SEWERS	0.036
OTHER OPERATIVES	0.071
MISC OPERATIVES	0.071

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

4C DATA PROCESSING

NOT LOOKING	0.0
FULL TIME SCHOOL	0.095
PART TIME SCHOOL	0.095
FULL TIME COLLEGE	0.095
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.714
UNEMPLOYMENT RATE	0.133
MEDICAL,OTHER	0.067
NURSE AIDES,ORDERLY	0.067
SALES WORKERS	0.067
SALESMEN	0.067
CLERICAL & KINDRED	0.733
BILLING CLERKS	0.067
FILE CLERKS	0.067
OFFICE MACH OPER	0.467
COMPUTER OPER	0.133
KEYPUNCH OPER	0.333
PAYROLL CLERKS	0.067
SHIP & RECEIVING	0.067

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

4C DATA PROCESSING

NOT LOOKING	0.0
FULL TIME SCHOOL	0.088
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.147
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.765
UNEMPLOYMENT RATE	0.231
CLERICAL & KINDRED	0.538
CASHIERS	0.038
FILE CLERKS	0.115
OFFICE MACH OPER	0.269
BOOKKEEPING MACH	0.038
DUPLICATING MACH	0.038
KEYPUNCH OPER	0.192
SECRETARIES	0.038
STOCK CLERKS	0.038
TYPISTS	0.038
CRAFTSMEN & KINDRED	0.038
PRINTING TRADES	0.038
PRESSMEN	0.038
SERVICE WORKERS	0.192
FOOD SERVICE	0.192
COUNTER & FOUNTAIN	0.038
WAITERS	0.115
FOOD SERVICE NEC	0.038

41. GENERAL CLERICAL/OFFICE PRACTICE

From 10 percent of a combined total of 17,339 graduates surveyed from the General Clerical and Office Practice and the Clerk/Typist programs of the Pennsylvania public secondary schools, 254 useable returns were obtained, which is about 32 percent of the total surveyed.

The graduates from this program were characterized by comparatively high school attendance rates, participation rates, and unemployment rates. Interestingly, about 27 percent of the Pittsburgh graduates, about 14 percent of the Philadelphia graduates, and about 25 percent of the graduates from the rest of the state continued their education. The participation rates for all three areas were about 62 percent for Pittsburgh, about 72 percent for Philadelphia, and about 66 percent for the rest of the state. The unemployment rates were inordinately high at about 29 percent for the Pittsburgh LMA, about 29 percent for the Philadelphia LMA, and about 20 percent for the rest of the state. From these percentages it can be assumed that the graduates from this program, in many cases, went on to full-time school or college rather than risk unemployment because of an insufficient need for their skills throughout the state.

This is further demonstrated by the categories of highly related to unrelated, where we find 50 percent of the Pittsburgh graduates, about 59 percent of the Philadelphia graduates and 46 percent of the graduates from the rest of the state were employed in related fields under the category Clerical and Kindred. The rest of the graduates found work in fields unrelated to their program. These are assumed to be:

(a) Sales
(b) Operatives and Kindred
(c) Service Workers
(d) Craftsmen and Kindred

About 19 percent of the Pittsburgh graduates, about 11 percent of the Philadelphia graduates and about 31 percent of the graduates from the rest of the state, obtained jobs in the unrelated category.

From these percentages, it is possible to assume that there were too many graduates from this program to be assimulated into the labor force at the time of the study. The graduates who went on to school may have done so because they could not find employment in their field and those who did not plan to continue their education found a great deal of trouble in getting jobs.

TABLE III

AREA: REST OF STATE

41 GENERAL CLERICAL

NOT LOOKING	0.036
FULL TIME SCHOOL	0.130
PART TIME SCHOOL	0.006
FULL TIME COLLEGE	0.124
PART TIME COLLEGE	0.006
MILITARY	0.024
OTHER	0.018
PARTICIPATION RATE	0.657
UNEMPLOYMENT RATE	0.198
SALES WORKERS	0.063
DEMONSTRATORS	0.018
SALESMEN	0.045
CLERICAL & KINDRED	0.459
BOOKKEEPERS	0.054
CASHIERS	0.018
FILE CLERKS	0.018
RECEPTIONISTS	0.018
SECRETARIES	0.126
STENOGRAPHERS	0.018
TYPISTS	0.090
MISC CLERICAL	0.054
OPERATIVES & KINDRED	0.207
SEMISKILLED TEXTILE	0.117
DYERS	0.036
PACKERS	0.054
TEXTILE OPERATIVES	0.027
TEXTILE OPER NEC	0.027
OTHER OPERATIVES	0.072
ASSEMBLERS	0.018
MISC OPERATIVES	0.045
SERVICE WORKERS	0.054
FOOD SERVICE	0.036
WAITERS	0.027
PERSONAL SERVICE	0.018

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

41 GENERAL CLERICAL

NOT LOOKING	0.021
FULL TIME SCHOOL	0.091
PART TIME SCHOOL	0.091
FULL TIME COLLEGE	0.054
PART TIME COLLEGE	0.0
MILITARY	0.008
OTHER	0.012
PARTICIPATION RATE	0.723
UNEMPLOYMENT RATE	0.286
SALES WORKERS	0.029
SALESMEN	0.029
CLERICAL & KINDRED	0.594
BOOKKEEPERS	0.029
CASHIERS	0.034
BILLING CLERKS	0.034
ESTIMATORS	0.011
FILE CLERKS	0.023
INSURANCE EXAM	0.011
OFFICE MACH OPER	0.023
KEYPUNCH OPER	0.011
SECRETARIES	0.086
SHIP & RECEIVING	0.029
STATISTICAL CLERKS	0.011
STOCK CLERKS	0.011
TELEPHONE OPER	0.017
TYPISTS	0.183
MISC CLERICAL	0.074
CRAFTSMEN & KINDRED	0.011
OPERATIVES & KINDRED	0.023
OTHER OPERATIVES	0.017
MISC OPERATIVES	0.017
SERVICE WORKERS	0.051
FOOD SERVICE	0.023
FOOD SERVICE NEC	0.023
PERSONAL SERVICE	0.029
ATTENDANTS,NEC	0.011
COSMETOLOGISTS	0.011

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

41 GENERAL CLERICAL

NOT LOOKING	0.021
FULL TIME SCHOOL	0.118
PART TIME SCHOOL	0.069
FULL TIME COLLEGE	0.153
PART TIME COLLEGE	0.0
MILITARY	0.014
OTHER	0.0
PARTICIPATION RATE	0.625
UNEMPLOYMENT RATE	0.289
MEDICAL,OTHER	0.022
NURSE AIDES,ORDERLY	0.022
SALES WORKERS	0.056
SALESMEN	0.056
CLERICAL & KINDRED	0.500
BOOKKEEPERS	0.056
CASHIERS	0.033
BILLING CLERKS	0.011
DISPATCHERS	0.011
FILE CLERKS	0.011
LIBRARY ATTEND	0.011
MAIL HANDLERS	0.022
OFFICE MACH OPER	0.011
KEYPUNCH OPER	0.011
RECEPTIONISTS	0.044
SECRETARIES	0.178
SHIP & RECEIVING	0.011
TEACHER AIDES	0.011
TELEPHONE OPER	0.033
TYPISTS	0.022
MISC CLERICAL	0.033
OPERATIVES & KINDRED	0.044
METAL WORK OPERATIVE	0.011
MISC METAL OPER	0.011
OTHER OPERATIVES	0.033
MISC OPERATIVES	0.033
SERVICE WORKERS	0.089
FOOD SERVICE	0.078
COUNTER & FOUNTAIN	0.011
WAITERS	0.056
FOOD SERVICE NEC	0.011
PERSONAL SERVICE	0.011
ATTENDANTS,NEC	0.011

42. STENOGRAPHICAL/SECRETARIAL PROGRAMS

Ten percent of the 9,740 graduates in the Stenographic/Secretarial program in Pennsylvania public secondary schools were surveyed. A total of 917 useable returns were obtained, which represents about 94.1 percent of the total.

A fairly high percentage of graduates from this field of study went on to continue their education. As the accompanying tables indicate; about 14 percent of the graduates from the rest of the state, about 15 percent of the Philadelphia LMA, and about 19 percent of the Pittsburgh LMA graduates went on to full-time school or college.

Interestingly, the Philadelphia LMA graduates had a very high participation rate at almost 80 percent and the lowest unemployment rate of the three areas at about 4 percent. Although Pittsburgh and the rest of the state have comparable participation rates for these graduates at about 74 percent and 78 percent, respectively, they had high unemployment rates at the same time, about 15 percent and 13 percent. Few of the graduates from the Philadelphia LMA (.8%) were not looking for employment as well as those from Pittsburgh (1%), but 3.4 percent of the graduates from the rest of the state were not seeking work. Participation in the military was negligible for all three areas.

The Philadelphia LMA graduates can be seen as having done quite well in obtaining jobs highly related to their field of study (about 67%) as well as having such a low unemployment rate. The graduates from the rest of the state run second with about 56 percent getting highly related jobs and Pittsburgh graduates are last at 48 percent.

Jobs which are assumed to be highly related to the Stenographic/ Secretarial field are:

(a) Secretary
(b) Stenographer
(c) Typist
(d) Receptionist

There are a sizable number of jobs which are considered to be slightly related to the Stenographic/Secretarial field. These are:

(a) Bank Teller
(b) Bookkeepers
(c) Billing Clerks
(d) Cashiers
(e) File Clerks
(f) Office Machine Operators
(g) Payroll Clerks
(h) Postal Clerks
(i) Shipping and Receiving Clerks
(j) Telephone Operator
(k) Statistical Clerks
(l) Misc. Clerical Work

The graduates from Pittsburgh showed a great deal of employment in the slightly related fields at about 25 percent. Philadelphia and the rest of the state were somewhat less at 19 percent and 21 percent respectively.

Very few of the graduates obtained employment in areas completely unrelated to their field. The rest of the state was highest at 3.3 percent with Pittsburgh and Philadelphia both at 2 percent.

Unrelated fields are assumed to be:

(a) Operatives
(b) Sales Workers
(c) Service Workers

Graduates from this area seem to be fortunate in that they have a comparatively low unemployment rate and tend to get jobs in their basic field of study. This may be due to the fact that graduates with secretarial skills are needed throughout the state.

TABLE III

AREA: REST OF STATE

42 STENO/SECRETARIAL

NOT LOOKING	0.034
FULL TIME SCHOOL	0.060
PART TIME SCHOOL	0.026
FULL TIME COLLEGE	0.082
PART TIME COLLEGE	0.011
MILITARY	0.004
OTHER	0.007
PARTICIPATION RATE	0.776
UNEMPLOYMENT RATE	0.125
CLERICAL & KINDRED	0.832
BANK TELLERS	0.034
BOOKKEEPERS	0.043
CASHIERS	0.014
BILLING CLERKS	0.024
FILE CLERKS	0.034
OFFICE MACH OPER	0.029
KEYPUNCH OPER	0.014
RECEPTIONISTS	0.019
SECRETARIES	0.409
STENOGRAPHERS	0.087
TYPISTS	0.043
MISC CLERICAL	0.043
OPERATIVES & KINDRED	0.014
SERVICE WORKERS	0.019
FOOD SERVICE	0.019

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

42 STENO/SECRETARIAL

NOT LOOKING	0.008
FULL TIME SCHOOL	0.037
PART TIME SCHOOL	0.020
FULL TIME COLLEGE	0.114
PART TIME COLLEGE	0.016
MILITARY	0.004
OTHER	0.004
PARTICIPATION RATE	0.797
UNEMPLOYMENT RATE	0.041
SALES WORKERS	0.010
SALESMEN	0.010
CLERICAL & KINDRED	0.929
BOOKKEEPERS	0.015
BILLING CLERKS	0.061
FILE CLERKS	0.041
OFFICE MACH OPER	0.015
OFFICE MACH,NEC	0.010
PAYROLL CLERKS	0.015
POSTAL CLERKS	0.010
SECRETARIES	0.388
STENOGRAPHERS	0.102
TELEPHONE OPER	0.020
TYPISTS	0.184
MISC CLERICAL	0.041
SERVICE WORKERS	0.010
FOOD SERVICE	0.010

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

42 STENO/SECRETARIAL

NOT LOOKING	0.010
FULL TIME SCHOOL	0.089
PART TIME SCHOOL	0.032
FULL TIME COLLEGE	0.102
PART TIME COLLEGE	0.010
MILITARY	0.012
OTHER	0.005
PARTICIPATION RATE	0.739
UNEMPLOYMENT RATE	0.151
MEDICAL,OTHER	0.010
SALES WORKERS	0.023
SALESMEN	0.023
CLERICAL & KINDRED	0.792
BOOKKEEPERS	0.027
CASHIERS	0.023
FILE CLERKS	0.074
OFFICE MACH OPER	0.010
SECRETARIES	0.359
SHIP & RECEIVING	0.010
STATISTICAL CLERKS	0.010
STENOGRAPHERS	0.060
TELEPHONE OPER	0.037
TYPISTS	0.064
MISC CLERICAL	0.060
SERVICE WORKERS	0.020
FOOD SERVICE	0.020
WAITERS	0.017

43. BUSINESS/OFFICE, OTHER THAN ABOVE

Included under this general heading are the Business Education/ Office Management and Other Office/Business programs. A total of 130 useable returns were received from the graduates from these programs. Because no information is available as to the actual number of graduates, the percent returns cannot be estimated.

The actual percent of the graduates not looking for work is less than three percent except for the Pittsburgh LMA where it is about 8 percent. This could be due to the fact that the unemployment rate (34.4%) is extremely high. On the other hand, the percent continuing their education full-time is fairly high ranging from 19 to 24 percent. Interestingly, although the percent who entered the military is low for the Pittsburgh LMA (3.9%), it is fairly high for the other two areas. This could be due to the fact that a larger percent of the graduates were males for these two areas.

In comparison to the other business education programs, the labor force participation rate for these programs is low, ranging from 54 to 63 percent of the total graduates. This might be due to the high unemployment rates, 18.2 percent for the rest of the state and 30.4 and 34.4 percent for the Philadelphia and Pittsburgh LMA's.

Assuming that all the occupations in the Clerical and Kindred category are related to the training, then it can be seen that between 46 and 57 percent of the graduates found related work. Also, assuming that the following are completely unrelated:

(a) Sales Workers
(b) Craftsmen and Kindred
(c) Operatives and Kindred
(d) Service Workers

Thus, it can be seen that about 13 percent from the Philadelphia and Pittsburgh LMA's found unrelated jobs, whereas 27 percent did so from the rest of the state. These are relatively low percentages and are rather comparable to those found for the other business programs.

TABLE III

AREA: REST OF STATE

43 BUS/OFFICE,OTHER

NOT LOOKING	0.027
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.027
FULL TIME COLLEGE	0.216
PART TIME COLLEGE	0.0
MILITARY	0.135
OTHER	0.0
PARTICIPATION RATE	0.595
UNEMPLOYMENT RATE	0.182
MEDICAL,OTHER	0.091
DENTAL ASSISTANTS	0.045
NURSE AIDES,ORDERLY	0.045
SALES WORKERS	0.045
SALESMEN	0.045
CLERICAL & KINDRED	0.455
BILLING CLERKS	0.045
FILE CLERKS	0.045
OFFICE MACH OPER	0.045
KEYPUNCH OPER	0.045
RECEPTIONISTS	0.045
SECRETARIES	0.091
STOCK CLERKS	0.045
MISC CLERICAL	0.136
CRAFTSMEN & KINDRED	0.045
PRINTING TRADES	0.045
PRESSMEN	0.045
OPERATIVES & KINDRED	0.091
SEMISKILLED TEXTILE	0.045
SEWERS	0.045
OTHER OPERATIVES	0.045
MISC OPERATIVES	0.045
SERVICE WORKERS	0.091
FOOD SERVICE	0.045
WAITERS	0.045
PERSONAL SERVICE	0.045
CHILD CARE WORKERS	0.045

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

43 BUS/OFFICE,OTHER

NOT LOOKING	0.023
FULL TIME SCHOOL	0.047
PART TIME SCHOOL	0.093
FULL TIME COLLEGE	0.140
PART TIME COLLEGE	0.047
MILITARY	0.116
OTHER	0.0
PARTICIPATION RATE	0.535
UNEMPLOYMENT RATE	0.304
SALES WORKERS	0.043
SALESMEN	0.043
CLERICAL & KINDRED	0.565
CASHIERS	0.043
INSURANCE EXAM	0.087
MAIL HANDLERS	0.043
OFFICE MACH OPER	0.130
COMPUTER OPER	0.043
KEYPUNCH OPER	0.043
OFFICE MACH,NEC	0.043
SECRETARIES	0.087
SHIP & RECEIVING	0.043
TYPISTS	0.043
MISC CLERICAL	0.087
OPERATIVES & KINDRED	0.087
SEMISKILLED TEXTILE	0.043
SEWERS	0.043
OTHER OPERATIVES	0.043
MISC OPERATIVES	0.043

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

43 BUS/OFFICE,OTHER

NOT LOOKING	0.076
FULL TIME SCHOOL	0.118
PART TIME SCHOOL	0.020
FULL TIME COLLEGE	0.118
PART TIME COLLEGE	0.0
MILITARY	0.039
OTHER	0.0
PARTICIPATION RATE	0.627
UNEMPLOYMENT RATE	0.344
MEDICAL,OTHER	0.031
NURSE AIDES,ORDERLY	0.031
SALES WORKERS	0.063
SALESMEN	0.063
CLERICAL & KINDRED	0.500
CASHIERS	0.063
FILE CLERKS	0.063
OFFICE MACH OPER	0.031
KEYPUNCH OPER	0.031
RECEPTIONISTS	0.031
SECRETARIES	0.031
STENOGRAPHERS	0.031
TELEPHONE OPER	0.063
TYPISTS	0.063
MISC CLERICAL	0.125
SERVICE WORKERS	0.063
FOOD SERVICE	0.031
WAITERS	0.031
PERSONAL SERVICE	0.031
ATTEND,RECRE & AMUS	0.031

44. FOOD DISTRIBUTION

Information is not available as to the number of students who graduated from the Food Distribution programs in 1970. Therefore, it cannot be ascertained as to what percent of the total the 59 useable returns represent. Because of the insignificant number of returns from the Philadelphia LMA graduates, they will not be discussed.

A large percentage of the graduates from this program continued their education, 20 percent from Pittsburgh and about 31 percent of the graduates from the rest of the state. This percentage is assumed to affect the participation rate somewhat in that 65 percent of the Pittsburgh graduates and about 69 percent of the graduates from the rest of the state entered the labor market.

The unemployment rate for the rest of the state was comparatively low, about 11 percent, while the Pittsburgh graduates experienced an inordinately high rate of about 31 percent.

The only highly related field for the graduates from this program is the Service Workers category. In this category about 23 percent and 33 percent of the Pittsburgh and graduates from the rest of the state, respectively, found employment. The rest of the graduates found work in fields assumed to be unrelated to their program:

(a) Sales
(b) Operatives and Kindred
(c) Personal Service
(d) Clerical and Kindred

About 46 percent of the Pittsburgh LMA graduates and about 55 percent of the graduates from the rest of the state were in this category.

From the above percentages, it can be assumed that either these graduates found it necessary to continue their education in order to get a higher related job, or that there is insufficient need for graduates with skills such as their's.

This analysis should be considered with a degree of reservation because of the small number of returns available for discussion.

TABLE III

AREA: REST OF STATE

44 FOOD DISTRIBUTION

NOT LOOKING	0.0
FULL TIME SCHOOL	0.154
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.154
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.692
UNEMPLOYMENT RATE	0.111
SALES WORKERS	0.111
SALESMEN	0.111
OPERATIVES & KINDRED	0.444
SEMISKILLED TEXTILE	0.222
TEXTILE OPERATIVES	0.222
SPINNERS	0.111
TEXTILE OPER NEC	0.111
OTHER OPERATIVES	0.222
ASSEMBLERS	0.111
MISC OPERATIVES	0.111
SERVICE WORKERS	0.333
FOOD SERVICE	0.333
COOKS	0.111
WAITERS	0.111
FOOD SERVICE NEC	0.111

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

44 FOOD DISTRIBUTION

NOT LOOKING	0.167
FULL TIME SCHOOL	0.333
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.0
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.500
UNEMPLOYMENT RATE	0.0
SALES WORKERS	0.333
SALESMEN	0.333
CLERICAL & KINDRED	0.333
BOOKKEEPERS	0.333
CRAFTSMEN & KINDRED	0.333
MECH & REPAIRMEN	0.333
AIR COND & REFRIG	0.333

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

44 FOOD DISTRIBUTION

NOT LOOKING	0.050
FULL TIME SCHOOL	0.050
PART TIME SCHOOL	0.050
FULL TIME COLLEGE	0.150
PART TIME COLLEGE	0.0
MILITARY	0.050
OTHER	0.0
PARTICIPATION RATE	0.650
UNEMPLOYMENT RATE	0.308
SALES WORKERS	0.077
SALESMEN	0.077
CLERICAL & KINDRED	0.269
CASHIERS	0.154
SHIP & RECEIVING	0.038
STOCK CLERKS	0.077
OPERATIVES & KINDRED	0.077
OTHER OPERATIVES	0.077
MEAT CUTTER,NONMFG	0.038
PAINTERS,MFG	0.038
SERVICE WORKERS	0.269
FOOD SERVICE	0.231
COOKS	0.038
COUNTER & FOUNTAIN	0.038
WAITERS	0.038
FOOD SERVICE NEC	0.115
PERSONAL SERVICE	0.038
CHILD CARE WORKERS	0.038

45. APPAREL, MERCHANDIZING AND RETAIL

Out of a total of 235 graduates surveyed from the Apparel, Merchandizing and Retail program of the Pennsylvania public secondary schools, 148 useable returns were obtained, which is about 62 percent of the total graduates. Because of the insignificant number of returns from the Philadelphia LMA graduates they will not be discussed in this analysis.

Of the graduates from this program, about 14 percent of the Pittsburgh graduates and about 17 percent of the graduates from the rest of the state continued their education. Both areas had comparable participation rates with Pittsburgh at about 65 percent and the rest of the state at about 66 percent. The unemployment rates for the Pittsburgh LMA graduates and for the rest of the state were about 17 percent and 22 percent, respectively, fairly high percentages.

Most of the graduates found employment in fields assumed to be highly related to their program:

(a) Sales
(b) Cashiers

Fifty percent of the Pittsburgh LMA graduates and about 43 percent of the graduates from the rest of the state found jobs in this category.

The rest of the graduates found work in unrelated fields. These are assumed to be:

(a) Medical, Other
(b) Operatives and Kindred
(c) Service Workers
(d) Billing Clerks
(e) Recptionists
(f) Secretaries
(g) Telephone Operators

About 24 percent of the Pittsburgh graduates and about 27 percent of the graduates from the rest of the state found employment in this category.

As was found in so many other programs, these graduates seemed to have found difficulty in obtaining related jobs. This may be because of the need for higher education or because of insufficient need for graduates with their skills.

TABLE III

AREA: REST OF STATE

45 APPAREL,MERCH & RETAIL

NOT LOOKING	0.057
FULL TIME SCHOOL	0.057
PART TIME SCHOOL	0.029
FULL TIME COLLEGE	0.114
PART TIME COLLEGE	0.086
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.657
UNEMPLOYMENT RATE	0.217
MEDICAL,OTHER	0.043
NURSE AIDES,ORDERLY	0.043
SALES WORKERS	0.304
SALESMEN	0.304
CLERICAL & KINDRED	0.261
CASHIERS	0.130
OFFICE MACH OPER	0.043
OFFICE MACH,NEC	0.043
PROOFREADERS	0.043
TELEPHONE OPER	0.043
OPERATIVES & KINDRED	0.130
SEMISKILLED TEXTILE	0.043
PACKERS	0.043
OTHER OPERATIVES	0.087
MISC OPERATIVES	0.087
SERVICE WORKERS	0.043
FOOD SERVICE	0.043
COUNTER & FOUNTAIN	0.043

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

45 APPAREL,MERCH & RETAIL

NOT LOOKING	0.0
FULL TIME SCHOOL	0.0
PART TIME SCHOOL	0.0
FULL TIME COLLEGE	0.167
PART TIME COLLEGE	0.0
MILITARY	0.0
OTHER	0.0
PARTICIPATION RATE	0.833
UNEMPLOYMENT RATE	0.100
SALES WORKERS	0.200
SALESMEN	0.200
CLERICAL & KINDRED	0.600
CASHIERS	0.100
MAIL HANDLERS	0.100
SECRETARIES	0.100
TEACHER AIDES	0.100
TELEPHONE OPER	0.100
TYPISTS	0.100
SERVICE WORKERS	0.100
PERSONAL SERVICE	0.100
ATTENDANTS,NEC	0.100

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

45 APPAREL, MERCH & RETAIL

NOT LOOKING	0.040
FULL TIME SCHOOL	0.069
PART TIME SCHOOL	0.050
FULL TIME COLLEGE	0.079
PART TIME COLLEGE	0.089
MILITARY	0.020
OTHER	0.0
PARTICIPATION RATE	0.653
UNEMPLOYMENT RATE	0.167
MEDICAL, OTHER	0.015
NURSE AIDES, ORDERLY	0.015
SALES WORKERS	0.470
SALESMEN	0.470
CLERICAL & KINDRED	0.258
CASHIERS	0.030
BILLING CLERKS	0.030
RECEPTIONISTS	0.015
SECRETARIES	0.045
STOCK CLERKS	0.030
TELEPHONE OPER	0.061
MISC CLERICAL	0.045
OPERATIVES & KINDRED	0.030
METAL WORK OPERATIVE	0.015
MISC METAL OPER	0.015
OTHER OPERATIVES	0.015
MISC OPERATIVES	0.015
SERVICE WORKERS	0.061
CLEANING SERVICE	0.015
CLEANERS	0.015
FOOD SERVICE	0.030
WAITERS	0.015
FOOD SERVICE NEC	0.015
PERSONAL SERVICE	0.015
COSMETOLOGISTS	0.015

46. DISTRIBUTIVE EDUCATION, OTHER THAN ABOVE

Included under this general program heading are the following specific Distributive Education programs:

(a) Automotive
(b) Finance and Credit
(c) Personal Service
(d) Distributive Education, Other

Unfortunately, no information is available as to the actual number of graduates from these programs. Therefore, it cannot be stated what percent of the total the 478 useable returns represent. As it can be seen in the accompanying tables, about 12 and 11 percent of the graduates from the rest of the state and the Philadelphia LMA continued their education. For the Pittsburgh LMA this was slightly higher at about 17 percent. Only about five percent entered the military from all three areas. As a result, the labor force participation rate is comparatively high, 70 percent for the rest of the state, 75 percent for the Philadelphia LMA, and about 65 percent for the Pittsburgh LMA. However, the unemployment rate for these students at the time of the survey was high for the rest of the state (22.1%) and the Pittsburgh LMA (25.2%) with a fairly low rate of 8.8 percent for the Philadelphia LMA.

Here as in some of the other programs, there is an apparent inverse relationship between the unemployment rate and the participation rate. This would appear to indicate that high unemployment rates tend to discourage graduates from participating in the labor force.

If it is assumed that the general occupational categories of Sales Workers, Personal Service and Clerical and Kindred are related occupations, then it can be seen that 46.4 percent from the rest of the state, 71 percent from the Philadelphia LMA, and 54.8 percent from the Pittsburgh LMA found related jobs. Interestingly, the unemployment rate for the Philadelphia LMA is low and the percent finding a job related to their training is high. The percent of the students finding jobs unrelated to their training is lows.

In comparison to the graduates from the Distributive Education programs detailed earlier, this group has had greater success in finding jobs related to their training. However, with the exception of the Philadelphia LMA graduates, the unemployment rates are comparable to the other programs.

TABLE III

AREA: REST OF STATE

46 DISTRIB EDUC,OTHER

NOT LOOKING	0.059
FULL TIME SCHOOL	0.029
PART TIME SCHOOL	0.022
FULL TIME COLLEGE	0.088
PART TIME COLLEGE	0.044
MILITARY	0.059
OTHER	0.0
PARTICIPATION RATE	0.699
UNEMPLOYMENT RATE	0.221
MEDICAL,OTHER	0.021
DENTAL ASSISTANTS	0.011
NURSE AIDES,ORDERLY	0.011
SALES WORKERS	0.232
SALESMEN	0.232
CLERICAL & KINDRED	0.200
BANK TELLERS	0.011
CASHIERS	0.021
OFFICE MACH OPER	0.021
OFFICE MACH,NEC	0.021
SECRETARIES	0.042
SHIP & RECEIVING	0.021
STATISTICAL CLERKS	0.011
STENOGRAPHERS	0.011
STOCK CLERKS	0.021
TYPISTS	0.011
MISC CLERICAL	0.032
CRAFTSMEN & KINDRED	0.042
MECH & REPAIRMEN	0.042
AUTOMOBILE	0.032
MISC MECH & REPAIR	0.011
OPERATIVES & KINDRED	0.221
CONSTRUCTION OPER	0.011
MISC CONSTRU OPER	0.011
METAL WORK OPERATIVE	0.011
FILERS	0.011
TRANSPORT EQUIP OPER	0.032
DELIVERYMEN	0.021
FORK LIFT OPER	0.011
SEMISKILLED TEXTILE	0.074
PACKERS	0.011
SEWERS	0.032
TEXTILE OPERATIVES	0.032
KNITTERS	0.011
TEXTILE OPER NEC	0.021
OTHER OPERATIVES	0.095
ASSEMBLERS	0.042
MISC OPERATIVES	0.053
SERVICE WORKERS	0.063
CLEANING SERVICE	0.011
JANITORS	0.011
FOOD SERVICE	0.021
COOKS	0.011
WAITERS	0.011
PERSONAL SERVICE	0.032
ATTENDANTS,NEC	0.011
CHILD CARE WORKERS	0.011
COSMETOLOGISTS	0.011

TABLE III

AREA: PHILADELPHIA LABOR MARKET AREA

40 DISTRIB EDUC,OTHER

NOT LOOKING	0.026
FULL TIME SCHOOL	0.052
PART TIME SCHOOL	0.033
FULL TIME COLLEGE	0.059
PART TIME COLLEGE	0.026
MILITARY	0.052
OTHER	0.007
PARTICIPATION RATE	0.745
UNEMPLOYMENT RATE	0.088
SALES WORKERS	0.105
SALESMEN	0.105
CLERICAL & KINDRED	0.623
BOOKKEEPERS	0.035
CASHIERS	0.053
BILLING CLERKS	0.035
OFFICE MACH OPER	0.053
COMPUTER OPER	0.018
OFFICE MACH,NEC	0.026
SECRETARIES	0.114
SHIP & RECEIVING	0.026
STENOGRAPHERS	0.018
STOCK CLERKS	0.044
TELEPHONE OPER	0.026
TYPISTS	0.044
MISC CLERICAL	0.132
CRAFTSMEN & KINDRED	0.035
PRINTING TRADES	0.018
PRESSMEN	0.018
OTHER CRAFTSMEN	0.018
OPERATIVES & KINDRED	0.070
SEMISKILLED TEXTILE	0.035
PACKERS	0.018
OTHER OPERATIVES	0.026
SERVICE WORKERS	0.061
FOOD SERVICE	0.044
WAITERS	0.018
FOOD SERVICE NEC	0.018

TABLE III

AREA: PITTSBURGH LABOR MARKET AREA

40 DISTRIB EDUC,OTHER

NOT LOOKING	0.048
FULL TIME SCHOOL	0.062
PART TIME SCHOOL	0.062
FULL TIME COLLEGE	0.105
PART TIME COLLEGE	0.019
MILITARY	0.053
OTHER	0.005
PARTICIPATION RATE	0.646
UNEMPLOYMENT RATE	0.252
SALES WORKERS	0.274
SALESMEN	0.267
CLERICAL & KINDRED	0.259
BANK TELLERS	0.015
CASHIERS	0.052
FILE CLERKS	0.022
OFFICE MACH OPER	0.015
KEYPUNCH OPER	0.015
SECRETARIES	0.037
SHIP & RECEIVING	0.022
STOCK CLERKS	0.030
TELEPHONE OPER	0.030
MISC CLERICAL	0.037
CRAFTSMEN & KINDRED	0.015
MECH & REPAIRMEN	0.015
AUTOMOBILE	0.015
OPERATIVES & KINDRED	0.111
METAL WORK OPERATIVE	0.037
DRILL PRESS	0.015
MACH OPER,NEC	0.015
MISC METAL OPER	0.015
OTHER OPERATIVES	0.067
MISC OPERATIVES	0.044
SERVICE WORKERS	0.074
FOOD SERVICE	0.052
COUNTER & FOUNTAIN	0.015
WAITERS	0.030
PERSONAL SERVICE	0.015
COSMETOLOGISTS	0.015

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

From this study of the occupations entered by the 1970 graduates from the various public secondary vocational-technical school programs, it was seen that there is much diversity as to the students' ability to find jobs related to their training. Also, a substantial percent of the graduates sought further training on a full-time basis or entered the military service.

An investigation of the unemployment rates of the graduates by program indicated that there appears to be an inverse relationship between the unemployment rate and in the ability of the graduates to find jobs related to their training. This appears to corroborate assertions that vocational education planners must plan programs in light of information on the supply and demand of manpower. This was further borne out by the tendency for the graduates to get unrelated jobs in direct relation to the unemployment rate. On the basis of these findings, it is suggested that labor market demands can be gauged to a large extent by student follow-up information.

Related to these findings, it was seen that an inverse relationship appears to exist between the unemployment rate and the labor force participation rate. If it is assumed that a high unemployment rate is directly related to a low demand for manpower, then it would appear that the labor force participation rate is directly related to demand for manpower. Therefore, it is recommended that a study be conducted to

determine the effect of low manpower demand on the labor force participation rate for graduating seniors and how this influences the percentage of the graduates who continue their education on a full-time basis.

Related findings were that most of the trade and industrial programs are oriented to training students for a point cluster. Considering that on the average over 50 percent of the graduates did get jobs directly related to their training, some of the inherent dangers of training for a point cluster seem to have been overcome. However, as it was seen for the graduates from the Pittsburgh labor market area, there appears to be an inverse relationship between getting a related job and the unemployment rate. Thus, the implications are that a program planner can gauge the demand for this type of training by knowing the unemployment rate experienced by the graduates from these programs.

For the Home Economics and Distributive Education programs, however, this appears not to hold true. This may be due to the fact that the training received in these programs is quite general and there is a serious question as to which types of occupations these programs are oriented toward. The fact that the unemployment rates were so inordinately high and that such a large percentage of the graduates were employed in obviously unrelated jobs indicates that a major re-evaluation should be made of these programs. For these reasons, it is recommended that vocational education program planners determine first which occupation these programs should be oriented toward and then alter the curriculum accordingly. Based on the findings in this study, this is a

necessary step if the graduates from these programs are ever to find work in jobs other than those for which even a high school dropout can effectively compete.

The graduates from the business programs, according to these findings, appear to have gotten training which permits entry into a variety of related occupations. Only a small percent were found to have been in jobs unrelated to their field of training. On the basis of these findings, it would seem that the students are well prepared by these programs. However, there is some question if the Accounting/ Bookkeeping program should be as large as it is. This can be seen by the fact that such a small percentage of the graduates from this program found unrelated jobs. For this reason, it is recommended that program planners assess their local labor market's demand for this type of training and reduce the number enrolled based on their findings.

As for the business programs, the Health programs are oriented to a cluster of occupations. However, because most of the occupations in that cluster require further training at the post-secondary level or within a hospital, these programs should be oriented toward giving students a background so that they can continue their education. Based on the findings, it can be seen that only a small percent entered related jobs directly after graduation. This seems to corroborate earlier assertion that the students require further education after high school. Also, considering that both national and state-wide projections indicate a high demand for medical personnel, it is difficult to explain the high rates of unemployment found for the graduates from these programs.

From the findings on the graduates from the technical programs, it was seen that a major portion either continued their education full-time or entered the military service. Those that did enter the labor market appeared to have had a difficult time finding employment in a related field. This may have been due to the fact that only the less capable went to work. An implication from this finding would be that the students entering the labor market be evaluated in terms of proficiency. If it is established that it is a fact that only the less proficient graduates enter the labor market, then, the requirements for entry into the technical programs could be increased. This would, of necessity reduce the enrollments in these programs. If it is remembered that a large percent of the graduates found unrelated jobs, this would not be a disservice to the students. Rather, it would allow the students to get training more in keeping with their abilities and give them training in other areas which are more in demand.

For the agricultural programs it was found that only a small percent of the graduates get jobs related to their training whether the jobs be on-farm or off-farm. In view of the historical trends, which show a constant decrease in demand for agriculture related training, it is difficult to understand why these programs expand every year. The findings in this study clearly point out that the demand for these graduates is low. Therefore, it is strongly recommended that the agricultural programs be reduced substantially. This is seen as necessary if the graduates from these programs are ever to be able to get jobs at a skill level higher than that ordinarily gotten without a high school diploma.

As it was pointed out under the section entitled, "Limitations," the findings give information on what first entry jobs the graduates found four to five months after graduation. For this reason, the present findings may not be a fair assessment of vocational-technical graduates' ability to find viable jobs. Therefore, it is recommended that subsequent follow-up studies be conducted one year or more after graduation. Also, subsequent Instructional Program/Occupation matrices should be developed for different years so that it can be determined how stable the matrices are over time and which variables, if any, influence changes.

The high rates of unemployment experienced by the graduates from most programs clearly indicates that the schools must provide a placement service and the the placement activity should start well in advance of graduation. Related to this, it appears imperative that local school districts in the Pittsburgh labor market areas determine what is causing such high unemployment for their graduates even though the general unemployment rate was lower than that for the other two areas.

In conclusion, these findings indicate that the vocational-technical graduates in 1970 had a difficult time finding jobs related to their training. This appears to contradict assertions that vocational education can do a better job in training students to become viable members of the labor market. Further, it appears that vocational education in Pennsylvania has a large task ahead if it ever hopes to meet the mandate to educate students for the world of work.

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APPENDICES

APPENDIX A

COURSE CODE LIST

PENNSYLVANIA CLASS OF 1970 FOLLOW-UP SURVEY

CODE	TRADE & INDUSTRIAL
001	Air Conditioning
002	Air Conditioning & Heating
004	Air Conditioning & Refrigeration
003	Air Conditioning, Other
006	Aircraft Maintenance
009	Appliance Repair
010	Automotive Body & Fender
011	Automotive Mechanics
012	Auto-Diesel Mechanics
013	Automotive, Other than above
018	Baking
020	Bio-Lab Assistant
030	Building Construct. Trades
035	Building Mainten. Trades
040	Business Mach. Maintenance
050	Carpentry
051	Ceramics
052	Commercial Foods
053	Commercial Art
054	Computer Maintenance
055	Cosmetology
060	Custodial Services
065	Diesel Mechanic
066	Drafting, Architectural
067	Drafting
068	Dressmaking
069	Dry Cleaning/Pressing
080	Elect. Power Gen. Plants
081	Electrical, Repair & Maint.
082	Electrical, Industrial
083	Electrical, Construction
089	Electrical Occup., Other
092	Foundry
093	Furniture Refinishing
095	Graphic Arts
100	Heavy Equip. Construction
105	Hydraulics (Fluid Power)
107	Industrial Chemistry
110	Machine Shop
112	Machine Tool Operator
115	Masonry/Bricklayer

CODE	TRADE & INDUSTRIAL (CON'T.)
117	Material Handling
118	Meat Cutting
119	Metal Fabrication
122	Mill & Cabinetmaker
125	Mine Maintenance
128	Motor Repair (Electrical)
137	Optical Mechanics
140	Ornamental Iron Work
150	Painting/Decorating
153	Patternmaker
154	Photography
156	Plastics Occupations
159	Plumbing
162	Power Sewing
163	Printing, General
164	Printing, Management
165	Printing, Offset
166	Printing, Type Composition
169	Printing, Other than above
170	Radio/Television
175	Refrigeration
190	Sheet Metal
192	Shoe Manufact./Repair
195	Small Engine Repair
200	Tailoring
205	Textile Prod. & Fabrication
210	Tool & Die Maker
220	Upholstering
225	Vending Machine Repair
230	Welding
235	Woodworking, Vocational
299	T & I, Other than above

CODE	TECHNICAL
300	Aeronautical Technology
310	Architectural Design
312	Arch. & Building technology
315	Audio-Visual Commun. Technology
320	Automotive Technology

Appendix A--continued

CODE	TECHNICAL (CON'T.)
323	Building Construct. Technology
325	Chemical Technology
327	Civil Technology
328	Computer Programming
329	Diesel Technology
330	Electrical Technology
333	Electro-Mechanical Technology
335	Electronics Technology
340	Engineering Rel. Technology
345	Environ. Control Technology
350	Industrial Technology
353	Instrumentation Technology
355	Mech. Drafting & Design
358	Mechanical Technology
360	Metallurgical Technology
365	Nuclear Technology
367	Plastics Technology
370	Research Lab. Assistant
375	Scientific Data Processing
380	Tool & Die Design Technology
390	Welding Technology
399	Technical, Other than above

CODE	HEALTH
400	Dental Ass't./Hygienist
405	Dental Lab. Technician
410	Health Assistant
415	Medical Assistant
419	Medical Lab Assistant
420	Medical Secretary
430	Nurses Aid
440	Nursery School Assistant
470	Optician Assistant
480	Practical Nurse
490	Radiological Technician
499	Other than above

CODE	AGRICULTURE
500	Ag. Production/Gen. Ag.
501	Ag. Supplies
502	Ag. Mechanics
503	Ag. Products
504	Ornamental Horticulture
506	Ag. Business
510	Ag. Resources

CODE	AGRICULTURE (CON'T.)
511	Ag. Science
515	Animal Technician
520	Forestry/Wildlife
530	Pre-Professional Ag.
531	Turf Management
599	Other than above

CODE	GAINFUL HOME ECON
600	Child Care
605	Clothing Services
610	Food Services
620	Home Furnishings
630	Institutional/Home Mngnt.
645	Vocational Home Economics
649	Other than above

CODE	BUSINESS/OFFICE
700	Accounting/Bookkeeping
703	Business Ed./Office Mngnt.
705	Clerk-Typist
707	Data Processing: Equipment Oper.
708	Data Processing: Programmer
709	Data Processing: Other
720	Gen. Clerical/Office Practice
728	Specialist Sec. Except Medical
730	Stenographic/Secretarial
799	Other Office/Business

Appendix A--continued

CODE	DISTRIBUTIVE
800	Advertising Services
805	Apparel & Accessories
810	Automotive
815	Finance & Credit
817	Floristry
819	Food Distribution
820	Food Services
825	Gen. Merchandise
830	Building/Garden Mtls.
832	Home Furnishing
835	Hotel and Lodging
840	Industrial Marketing
845	Insurance
850	International Trade
855	Personal Service
860	Petroleum
865	Real Estate
870	Recreation
875	Transportation
880	Retail Trade, Other
885	Wholesale Trade, Other
899	Distrib. Educ., Other

APPENDIX B

COURSE CODE LIST USED TO DEVELOP I/O MATRIX

CODE	OMIT
001, 002, 003, 004, 175	006
009, 081, 082, 083, 089, 128, 170	018
	020
010	054
011, 012, 013, 65	068
030, 035	069
	080
050, 122, 235	105
053, 095	117
055	118
066, 067	125
100	137
110, 112	140
115	154
159	156
163, 164, 165, 166, 169	192
190	195
230	200
299 (040, 051, 052, 060, 092, 093,	210
107, 119, 150, 153, 162, 205, 220)	225
310, 312	300
320, 329	350
325	365
327	367
328	
330, 333, 335	
355, 358	
375	
399 (315, 323, 340, 345,	
353, 360, 370, 380, 390)	
410	419
499 (400, 405, 415, 430, 480)	420
	440
	470
	490
500	501
502	503
504	511
599 (506, 510, 520, 530, 531)	515

Appendix B--continued

CODE	OMIT
600	
605	
610	
645	
649 (620, 630)	
700	
705	
707, 708, 709	
720	
728, 730	
799 (703)	
819, 820	800
880, 825, 805	817
899 (810, 815, 855)	830
	832
	835
	840
	845
	850
	860
	865
	870
	875
	885

APPENDIX C

COURSE CODE LIST USED IN S/D MODEL

CODE

1. Air Conditioning and Refrigeration
2. Electrical Programs
3. Automotive Body and Fender
4. Auto and Diesel Mechanics
5. Building Trades
6. Woodworking and Carpentry Programs
7. Commercial and Graphic Arts
8. Cosmetology
9. Drafting
10. Heavy Equipment Construction
11. Machine Programs
12. Masonry/Bricklayer
13. Plumbing
14. Printing Programs
15. Sheet Metal
16. Welding
17. T & I, Other than above
18. Architectural
19. Auto and Diesel Technology
20. Chemical Technology
21. Civil Technology
22. Computer Programming
23. Electrical Technology Programs
24. Mechanical Technology Programs
25. Scientific Data Processing
26. Technical, Other than above

27. Health Assistant
28. Health, Other than above
29. Ag. Production/General Ag.
30. Ag. Mechanics
31. Ornamental Horticulture
32. Agriculture, Other than above

33. Child Care
34. Clothing Services
35. Food Services
36. Vocational Home Economics
37. Gainful Home Econ., Other than above

Appendix C--continued

CODE

38. Accounting/Bookkeeping
39. Clerk--Typist
40. Data Processing Programs
41. General Clerical/Office Practice
42. Stenographical/Secretarial Programs
43. Business/Office, Other than above
44. Food Distribution and Services
45. Apparel, Merchandise and Retail Programs
46. Distributive Educ., Other than above

APPENDIX D

OCCUPATIONAL CLASSIFICATION AND STUDENT ENTRY

OCCUPATIONAL CLASSIFICATION	STUDENT ENTRY
Engineering Technicians	AGGREGATED
Agri. & Bio. tech., except health	----------
Aeronautical	----------
Chemical	chemical technician, electro-chemical technician
Civil	sanitation technician
Electrical & Electronic	electrical tech., electronic technician, electronic-communications technician, instrument technician
Industrial	----------
Mathematical	----------
Mechanical	----------
Metallurgical	----------
Mining	----------
Sales	----------
Technicians, NEC.	test tech., quality control technician, lab. tech. (non-hospital)
Technicians, Exc. Health & Eng. & Science	AGGREGATED
Computer programmers	business programmer, computer programmer, computer machine operator
Designers	interior decorator, display artist designer
Draftsmen	apprentice draftsman, mechanical draftsman, architectural draftsman, junior draftsman
Photographers	photographers
Radio Operators	----------
Surveyors	surveyor assistant
Tool programmers, numerical control	----------
Technicians, NEC.	(any not fitting the above)

Appendix D--continued

OCCUPATIONAL CLASSIFICATION	STUDENT ENTRY
Medical & Health Tech. & Tech.	AGGREGATED
Clinical laboratory	hospital lab. tech., radiological tech.
Dental laboratory	dental assistant
Nurses, professional	----------
Radiological	X-ray tech., radiological technician
Health tech. & tech., NEC	(any not fitting above)
Medical, other Health Workers	AGGREGATED
Dental assistants	dental assistant
Dental hygienists	----------
Health aids, except nursing	ambulance attendant
Nursing aids, orderlies & attendants	nurse aid, orderly, emergency room attendant, hospital attendant
Practical nurses	----------
Therapy assistants	----------
Managers & Administrators, except Farm	NOT USED
Sales Workers	AGGREGATED
Advertising agents & salesmen	printing salesman, ad salesman
Demonstrators	model
Salesmen & sales clerks	retail clerk, manager trainee, assistant manager of shoe store, salesgirl, sales (also a whole series stating--sell clothes, etc.), Avon girl
(subcategories were not used)	
Clerical & Kindred Workers	AGGREGATED
Bank tellers	bank teller, teller in a bank
Billing clerks	accounting clerk, billing department
Bookkeepers	bookkeeper, accounts receivable, accounts payable, bookkeepers helper
Cashiers	cashier, cashier at A-Mart, desk clerk, make change, office cashier (various retail cashiers), register operators

Appendix D--continued

OCCUPATIONAL CLASSIFICATION	STUDENT ENTRY
Clerical assistants, social welfare	----------
Collectors, bill & account	collection clerk, coin collector for vending machines
Counter clerks, except food	----------
Dispatchers & starters, vehicles	dispatcher for trucking company, yellow cab-answering calls
Enumerators and interviewers	----------
Estimators & investigators, NEC	insurance investigator, title clerk, claim examiner
Expeditors & production control	control clerk, order detailer
File clerks	file clerk (a number stated--file clerk and general office, plus some typing, etc.)
Health record	hospital record clerk, admissions clerk
Insurance adjustors, examiners and investigators	claim examiner, title clerk, examiner for insurance company, credit clerk
Library attendants & assistants	circulation clerk, library helper stack books for library
Mail carriers, post office	mail carrier, work for post office
Mail handlers, except post office	work in mail room, mailer
Office Machine Operators	AGGREGATED
Bookkeeping & billing machine operators	bookkeeping mach. operator, billing machine operator
Calculating machine operators	----------
Duplicating machine operators	duplicating machine operator, operate Xerox machine, Mimeo operator
Keypunch operator	keypunch operator, card-punch operator
Tabulating machine operators	----------
Office machine operators, NEC	proof machine operator (any stating they operate office machines that do not fit above listing)
Payroll & timekeeping clerks	payroll clerk, timekeeper, rating clerk
Postal clerks	mail clerk, post office clerk

Appendix D--continued

OCCUPATIONAL CLASSIFICATION	STUDENT ENTRY
Proofreaders	proofreader, typing checks, data clerk
Receptionists	receptionist, medical receptionist, letter information clerk, information clerk
Secretaries	Secretary, girl Friday, private secretary, medical secretary, legal secretary
Shipping & receiving clerks	shipper, packer, shipping clerk, receiver, order checker, record clerk, sorter, loading & inventory
Statistical clerks	recording clerk, report clerk
Stenographers	stenographer, Steno I, Steno II
Stock clerks & storekeepers	grocery clerk, store clerk, assistant manager food store, stock clerk
Teacher aids, except school monitors	teacher aid
Telegraph operator	telegraph operator, telefax clerk
Telephone operator	telephone operator, switchboard operator, p.b.x. operator
Ticket station & express agents	----------
Typists	typist, clerk typist
Misc. clerical workers	order filler, data recorder, code clerk, Jr. clerk, office helper, runner for a bank, clerk, general clerical (any other that do not fit above title, i.e., FBI clerk, coin clerk)
Craftsmen & Kindred Workers	AGGREGATED
Construction Craftsmen	AGGREGATED
Boilermakers	----------
Brickmasons & stonemasons	mason apprentice, mason, bricklayer, bricklayer apprentice
Cabinetmakers	cabinetmaker, cabinetmaker apprentice

Appendix D--continued

OCCUPATIONAL CLASSIFICATION	STUDENT ENTRY
Carpenters	carpenter, carpenter apprentice, rough carpenter (any other titles having carpenter in it except carpenter's helper)
Cement & concrete finishers	cement mason
Cranesmen, derrickmen & hoistmen	truck crane operator, steam-hoist operator, derrickman
Electricians	electrician, electrician apprentice
Excavating, grading & road machine operators	heavy equipment operator
Floor layers except tile setters	floor layer
Glaziers	----------
Inspectors, construction	----------
Painters, construction & maintenance	painter, house painter
Plasterers	plasterer, joint sealer
Plumbers and pipe fitters	plumber, plumber apprentice
Roofers & slaters	roofer, work for a roofing company
Stationary engineers	----------
Tile setters	tile setter, set bathroom tiles
Metal Working Craftsmen	AGGREGATED
Blacksmiths	blacksmith
Forgemen & hammermen	----------
Heat treaters & annealers	----------
Machinists	machinist, machinist apprentice, machine set-up man
Millwrights	millwright, milling machinist
Molders, metals	----------
Rollers & finishers, metal	----------
Sheet metal workers & tinsmiths	sheet metal workers, sheet metal apprentice
Tool & die makers	tool maker apprentice, die maker apprentice
Mechanics and Repairmen	AGGREGATED
Air conditioning, heating and refrigeration	heating unit repairman, air condition installer and repairman
Airplane mechanics	----------
Automobile body repairmen	body-fender man, auto body repair, body man

Appendix D--continued

OCCUPATIONAL CLASSIFICATION	STUDENT ENTRY
Automobile mechanics	auto mechanic, truck mechanic, transmission man
Data processing machine repairmen	----------
Farm implement	farm equipment mechanic, tractor mechanic
Heavy equipment mechanics, incl. diesel	diesel mechanic, construction equipment mechanic
Household appliance installers and mechanics	gas appliance serviceman, appliance serviceman, small appliance repairman
Loom fixers	----------
Office machine repairmen	----------
Radio & T.V. repairmen	T.V. repairs
Railroad & car shop repairmen	repairman of a R.R.
Misc. mechanics & repairmen	(any that do not fit above and titles such as-- mechanic, motor repairman, Audio-Visual Repair)
Printing Trades Craftsmen	AGGREGATED
Bookbinders	----------
Compositors & typesetters	linotype operator, phototype operator
Electrotypers & sterotypers	stereotyper, apprentice electrotyper
Photographers & lithographers	apprentice photoengraver, copyman
Pressmen and plate printers	printing apprentice, printer, offset pressman, offset press operator
Other Craftsmen & Kindred Workers	AGGREGATED
Automobile accessories installers	install new seat covers
Bakers	baker
Carpet installers	install carpets
Decorators & window dressers	display man, window trimmer, interior designer
Electric power linemen & cablemen	lineman for Bell Telephone
Furniture & wood finishers	----------
Jewelers & watchmakers	repair watches
Locomotive engineers	----------
Locomotive firemen	----------
Motion picture projectionists	----------
Opticians, lens grinders & polishers	grind lenses
Pattern & model makers, except paper	make patterns for sewing factory

Appendix D--continued

OCCUPATIONAL CLASSIFICATION	STUDENT ENTRY
Power station operators	----------
Shoe repairmen	----------
Stonecutters and stone carvers	----------
Tailors, factory	dressmaker, tailor
Telephone installers & repairmen	serviceman for W.E., telephone worker, house service--Bell Telephone
Telephone linemen & splicers	lineman for Bell Telephone
Upholsters	upholsterer, upholster furniture
Craftsmen & kindred, NEC	(any that do not fit above such as commercial art, fashion coordinator, artist and displayman, etc.)
Operatives and Kindred Workers	AGGREGATED
Construction Operatives	AGGREGATED
Asbestos & insulation workers	insulator
Blasters & powdermen	----------
Drillers, earth	----------
Oilers & greasers, except auto	----------
Riveters & fasteners	----------
Sawyers	sawyer
Construction operatives, NEC	(any not fitting above such as--electrician's helper, construction)
Metal Working Operatives	AGGREGATED
Checkers, examiners and inspectors, mfg.	----------
Cutting operatives, NEC	----------
Filers, polishers, sanders & buffers	grinder, filer
Furnacemen, smeltermen & pourers	foundry worker, furnaceman
Heaters, metal	heat treater
Metal platers	----------
Precision machine operatives	AGGREGATED
drill press operatives	drill press operator
grinding machine operatives	grinding machine operator
lathe & milling machine operatives	lathe operator, production machine operator, milling machine operator
precision machine operators, NEC	(any not fitting above)
Punch & stamp press operatives	punch operator, press operator
Solderers	solderer

Appendix D--continued

OCCUPATIONAL CLASSIFICATION	STUDENT ENTRY
Welders and flame cutters	welder, arc welder, acetelene man
Misc. & not specified operatives	(any other type of metal working operative not given above)
Transport Equipment Operatives	AGGREGATED
Bus drivers	----------
Deliverymen & routemen	deliver bread, routeman, deliver _____
Fork lift & tow motor operatives	fork lift operator
Motormen--mine, factory, logging camp, etc.	----------
Taxicab drivers & chauffeurs	----------
Truck drivers	truck driver, drive a truck
Transport equipment operatives, NEC	(transport occupations not included in above)
Semiskilled Textile Occupations	AGGREGATED
Dressmakers & seamstresses, except factory	dressmaker--own shop, seamstress for clothing store
Dyers	----------
Packers & wrappers, NEC	packer, packer in sewing factory
Sewers & stitchers	sewing machine operator, machine operator, operator, stitcher
Textile operatives	AGGREGATED
cording, lapping & combing	comber, corder
knitters, loopers, and toppers	knitting machine operator
spinners, twisters & winders	winder
weavers	weaver, weaver in a mill
textile operatives, NEC	(any not included above such as--floor girl)
Other Operatives	AGGREGATED
Assemblers	assemble furniture, circuit board assembler (any other titles containing the word assembler)
Bottling & canning operatives	work in a canning factory
Laundry & dry cleaning operatives	work in laundry room, laundry worker
Meat cutters & butchers, except factory	meat cutter for A & P (also other company names)
Meat wrappers, retail trade	meat wrapper

Appendix D--continued

OCCUPATIONAL CLASSIFICATION	STUDENT ENTRY
Milliners	----------
Mine operatives, NEC	----------
Mixing operatives	mix paint, dough mixer
Painters, manufacturer articles	(any giving a painting title that was not associated with house painting)
Photographic process workers	photo developer, dark room worker, line photographer
Misc. & not specified operatives	tank reader, meter reader, factory work, laborer, iron worker, yard work, etc. (also, responses such as--work for company X)
Laborers, Except Farm	AGGREGATED
Animal caretakers	vet's assistant, groomer
Carpenter's helpers	carpenter's helper
Construction laborers, except carpenter's helpers	helper for roofing company (any construction helpers jobs not specified above and those indicating construction)
Freight and material helpers	unload trucks, material handler
Horticulturists & floriculturists	work in greenhouse, florist's helper, florist
Nurserymen	nurseryman, tree transplanter, work for a nursery
Stockhandlers	stock boy, stockman
Teamsters	----------
Warehousemen, NEC	(any not fitting above)
Misc. & not specified laborers	milk processers, rubber sprayer & crater, rug cleaner, glass worker, fiber glass trade, groundskeeper
Farmers & Farm Managers	AGGREGATED
Farmers'	----------
Farm management advisors	----------
Farm managers	manage farm for the family
Farm Laborers & Farm Foremen	AGGREGATED
Farm foremen	----------
Farm laborers, unpaid	(farm worker and the like and not getting a salary)

Appendix D--continued

OCCUPATIONAL CLASSIFICATION	STUDENT ENTRY
Farm laborers, paid	dairy man, farm worker, hired hand
Farm service laborers, self-employed	farm my own land
Service Workers, Except Private Household	AGGREGATED
Cleaning Service Workers	AGGREGATED
Boarding & lodginghouse keepers	----------
Chambermaids & maids	----------
Cleaners & charwomen	----------
Janitors & sextons	porter, janitor, maintenance, sexton
Food Service Workers	AGGREGATED
Bartenders	----------
Cooks	cook, short order cook, pancake man, grill man
Food counter & fountain workers	tray girl, bus girl, work in the dietary department (also, any other food workers that are not waitresses)
Waitresses	waitress
Food service, NEC	helper, kitchen helper
Personal Service Workers	AGGREGATED
Airline stewardesses	----------
Attendants, recreation & amusement	recreation leader
Attendants, personal services, NEC	gas station attendant, bus boy
Barbers	----------
Child care workers	child care, work at day care center
Hairdressers & cosmetologists	hairdresser, shampoo girl, cosmetologist
School monitor	----------
Welfare service aides	----------
Personal service workers, NEC	----------
Protective Service Workers	AGGREGATED
Crossing guards & bridge tenders	----------
Firemen, fire protection	----------
Guards & watchmen	----------
Marshals, policemen, detectives, etc.	----------

APPENDIX E

SAMPLE: FOLLOW-UP SURVEY FORM

HIGH SCHOOL CLASS OF 1970
FOLLOW-UP CAREER SURVEY

• PLEASE READ LETTER ON REVERSE SIDE
• PLEASE ANSWER ALL QUESTIONS THAT APPLY TO YOU
• ALL ANSWERS ARE STRICTLY CONFIDENTIAL
• USE LEAD PENCIL ONLY. PLEASE MAKE BOLD MARKS
• ERASE MARK COMPLETELY IF YOU WANT TO CHANGE ANSWER
• RETURN QUESTIONNAIRE IN POSTAGE PAID ENVELOPE

PLEASE DON'T MARK AREA BELOW

DO NOT MARK IN THIS AREA PLEASE

CITY | SCHOOL | COURSE | STUDENT ID
WAVE | P1 | P2

THANK YOU!

A. ABOUT HIGH SCHOOL

1. DID YOU GET TO TAKE THE OCCUPATIONAL COURSE OF YOUR 1ST, 2ND OR 3RD CHOICE?
- First (1st) choice
- Second (2nd) choice
- Third (3rd) choice
- No choice available

WRITE NAME OF COURSE YOU TOOK

2. ASIDE FROM YOURSELF, WHO INFLUENCED YOUR OCCUPATIONAL COURSE CHOICE MOST? (Mark only one answer please)
- Guidance Counselor
- Vocational teacher
- Other school personnel
- Parents
- Brother/sister
- Relatives/family friends
- Personal friend of your age group
- Someone other than above (not you)

3. WHEN YOU MADE YOUR COURSE CHOICE HOW WELL INFORMED WERE YOU ABOUT THE OCCUPATION?
- Excellent — Consider things like
- Good — pay, type work, job
- Fair — opportunities, conditions
- Poor — of work, advancement, etc.

4. WHEN YOU SELECTED YOUR COURSE, DID YOU PLAN TO WORK IN THAT OCCUPATION?
- Yes, definitely yes
- Yes, but not definite
- No, but not definite
- No, definitely no

B. YOUR PRESENT STATUS

5. PLEASE MARK YOUR PRESENT STATUS. DO NOT MARK MORE THAN 1 BOX PER COLUMN. THANK YOU

A	B
	Employed, full-time
	Employed, part-time
	Unemployed, looking for work.
	Unemployed, not looking for work
	College, full-time
	College, part-time
	School (not college) full-time
	School (not college) part-time
	Military service
	Status other than above (explain):

C. ABOUT YOUR EMPLOYMENT

PLEASE SKIP TO SECTION D IF YOU DO NOT HAVE A FULL-TIME OR PART-TIME JOB

6. IS YOUR PRESENT JOB YOUR 1ST JOB SINCE YOU FINISHED HIGH SCHOOL?
- Yes
- No

7. HOW MANY WEEKS AFTER HIGH SCHOOL DID IT TAKE TO GET YOUR FIRST JOB?
- If less than 10 weeks, mark 0 plus the number. For example, three (3) weeks would be marked as 03
- DON'T FORGET • Were you looking for a job during most of that time? Yes / No

8. WHAT ANSWER BEST DESCRIBES HOW YOU GOT YOUR FIRST JOB AFTER HIGH SCHOOL? (Please mark only one answer)
- Already had job with employer
- Thru vocational teacher
- Thru school counselor
- Thru school placement office
- Thru other school personnel
- Private employment agency
- State employment agency
- Thru parent or relative
- Thru family or personal friend
- On my own, without anyone's help

9. WHAT KIND OF A JOB DO YOU HAVE? (Write in title, like auto mechanic, secretary)

10. HOW RELATED IS YOUR PRESENT JOB TO YOUR H.S. OCCUPATIONAL COURSE?
- Completely unrelated / Only slightly related — SKIP TO QUES. 12
- Highly related
- Same occupation studied

11. HOW WELL DID YOUR H.S. OCCUPATIONAL COURSE PREPARE YOU FOR YOUR PRESENT JOB?
- Excellent preparation
- Good preparation
- Not so good
- Poor preparation — SKIP TO QUES. 13

12. WHAT WAS THE MAIN REASON FOR NOT GETTING PRESENT JOB IN FIELD OF STUDY? (Please mark only one answer)
- Tried, but could not find job in field
- Was not accepted in apprentice program
- Did not feel sufficiently qualified
- Decided I did not like type of work
- Found out that pay was too low
- Too little advancement opportunity
- Better type job came along first
- Never really planned to do so
- Reason other than above

13. WHAT IS YOUR PRESENT HOURLY PAY RATE? (ABSOLUTELY CONFIDENTIAL)

Write figure below. $ | Cents

Also mark boxes

If not on hourly rate, write your salary below:

For example: $500.00 per month

DO NOT MARK BOXES IF ON SALARY

D. ABOUT COLLEGE OR SCHOOL

PLEASE SKIP TO SECTION E IF YOU ARE NOT NOW IN COLLEGE OR SCHOOL

14. ARE YOUR PRESENT STUDIES OR PLANNED COLLEGE MAJOR RELATED TO YOUR H.S. OCCUPATIONAL COURSE?
- Yes
- No

15. DID YOU DISCUSS YOUR COLLEGE OR SCHOOL PLANS WITH YOUR H. S. COUNSELOR?
- Yes
- No

E. YOUR PRESENT LOCATION

16. WHERE ARE YOU NOW LOCATED?
- City in which I went to H. S.
- Same state, different city
- Different state

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APPENDIX F

I/O MATRIX WORKSHEET

INSTRUCTIONAL PROGRAM	300	310 and 312	315	320	323	325	327	328	329	330
OCC. CLASSIF.										
UNEMPLOYED NOT LOOKING										
FULL-TIME SCHOOL										
PART-TIME SCHOOL										
FULL-TIME COLLEGE										
PART-TIME COLLEGE										
MILITARY										
OTHER										
DIFF. STATE										
DIFF. CITY										
PROFESSIONAL TECH. AND KINDRED										
ENGINEERING TECH.										
AGRICULTURE AND BIOLOGICAL TECH. EXCEPT HEALTH										
AERONAUTICAL										
CHEMICAL										
CIVIL										
ELECTRICAL AND ELECTRONIC										
INDUSTRIAL										

APPENDIX G

OCCUPATIONAL CLASSIFICATIONS

DOT CODE	OCCUPATIONAL CLASSIFICATION
0-1	PROFESSIONAL, TECHNICAL AND KINDRED
00	Engineering Technicians
	Agriculture and Biological technicians, except health
002	Aeronautical
008	Chemical
005	Civil
003	Electrical and electronic
012	Industrial
020	Mathematical
007	Mechanical
011	Metallurgical
010	Mining
012	Sales
019	Technicians, N.E.C.
19	Technicians, Except Health and Engineering and Science
020	Computer programmers
142	Designers
017	Draftsmen
143	Photographers
193	Radio operators
018	Surveyors
199	Tool programmers, numerical control
19	Technicians, N.E.C.
07	Medical and Health Technologists and Technicians
078	Clinical laboratory
079	Dental laboratory
075	Nurses, Professional
078	Radiologic
079	Health technologists and technicians, N.E.C.
07	Medical, other Health Workers
079	Dental assistants
078	Dental hygienists
355	Health aids, except nursing
355	Nursing aids, orderlies, and attendants
079	Practical Nurses
079	Therapy assistants

Appendix G--continued

DOT CODE	OCCUPATIONAL CLASSIFICATION
18	MANAGERS AND ADMINISTRATORS, EXCEPT FARM
25-29	SALES WORKERS
258	Advertising agents and salesmen
297	Demonstrators
26-28	Salesmen and sales clerks, N.E.C.
	manufacturing
	wholesale trade
	retail trade
	services and construction
2	CLERICAL AND KINDRED WORKERS
212	Bank tellers
214	Billing clerks
210	Bookkeepers
212	Cashiers
231	Clerical assistants, social welfare
240	Collectors, bill and account
239	Counter clerks, except food
239	Dispatchers and starters, vehicle
293	Enumerators and interviewers
191	Estimators and investigators, N.E.C.
221	Expediters and production control
206	File clerks
206	Health record
249	Insurance adjusters, examiners, and investigators
249	Library attendants and assistants
233	Mail carriers, post office
234	Mail handlers, except post office
21	Office machine operators
215	bookkeeping and billing machine operators
216	calculating machine operators
213	computer and console operators
207	duplicating machine operators
213	keypunch operators
213	tabulating machine operators
219	office machine operators, N.E.C.
219	Payroll and timekeeping clerks
232	Postal clerks
209	Proofreaders
237	Receptionists
201	Secretaries

Appendix G--continued

DOT CODE	OCCUPATIONAL CLASSIFICATION
222	Shipping and receiving clerks
219	Statistical clerks
202	Stenographers
223	Stock clerks and storekeepers
099	Teacher aides, except school monitors
236	Telegraph operators
235	Telephone operators
211	Ticket, station, and express agents
203	Typists
249	Misc. clerical workers
6-9	CRAFTSMEN AND KINDRED WORKERS
	Construction Craftsmen
805	Boilermakers
861	Brickmasons and stonemasons
660	Cabinetmakers
860	Carpenters
844	Cement and concrete finishers
921	Cranesmen, derrickmen, and hoistmen
820	Electricians
850	Excavating, grading, and road machine operators
864	Floor layers, except tile setters
865	Glaziers
869	Inspectors, construction
840	Painters, construction and maintenance
841	Paperhangers
842	Plasterers
862	Plumbers and pipe fitters
866	Roofers and slaters
950	Stationary engineers
891	Structural metal craftsmen
861	Tile setters
	Metal Working Craftsmen
610	Blacksmiths
610	Forgemen and hammermen
504	Heat treaters, annealers, and temperers
600	Machinists
605	Millwrights
617	Molders, metal
613	Rollers and finishers, metal
804	Sheet metal workers and tinsmiths
601	Tool-and-die makers

Appendix G--continued

DOT CODE	OCCUPATIONAL CLASSIFICATION
	Mechanics and Repairmen
637	Air conditioning, heating, and refrigeration repairmen
621	Airplane mechanics
807	Automobile body repairmen
620	Automobile mechanics
633	Data processing machine repairmen
624	Farm implement
625	Heavy equipment mechanics, incl. diesel
637	Household appliance and accessory installers and mechanics
628	Loom fixers
633	Office machine repairmen
720	Radio and TV repairmen
622	Railroad and car shop repairmen
639	Misc. mechanics and repairmen
	Printing Trades Craftsmen
653	Bookbinders
650	Compositors and typesetters
974	Electrotypers and stereotypers
971	Photoengravers and lithographers
651	Pressmen and plate printers
	Other Craftsmen and Kindred Workers
806	Automobile accessories installers
526	Bakers
751	Carpet installers
298	Decorators and window dressers
821	Electric power linemen and cablemen
763	Furniture and wood finishers
70	Jewelers and watchmakers
910	Locomotive engineers
910	Locomotive firemen
960	Motion picture projectionists
711	Opticians, lens grinders, and polishers
661	Pattern and model makers, except paper
952	Power station operators
365	Shoe repairmen
771	Stonecutters and stone carvers
785	Tailors, factory
822	Telephone installers and repairmen
821	Telephone linemen and splicers

Appendix G--continued

DOT CODE	OCCUPATIONAL CLASSIFICATION
780	Upholsterers
	Craftsmen and Kindred Workers, N.E.C.
	OPERATIVES AND KINDRED WORKERS
	Construction Operatives
863	Asbestos and insulation workers
931	Blasters and Powdermen
930	Drillers, earth
699	Oilers and greasers, except auto
800	Riveters and fasteners
677	Sawyers
	Metal Working Operatives
929	Checkers, examiners, and inspectors; mf.
709	Cutting operatives, N.E.C.
705	Filers, polishers, sanders, and buffers
502	Furnacemen, smeltermen, and pourers
504	Heaters, metal
500	Metal platers
60	Precision Machine operatives
606	drill press operatives
603	grinding machine operatives
604	lathe and milling machine operatives
609	precision machine operatives, N.E.C.
615	Punch and stamping press operatives
814	Solderers
810	Welders and flame cutters
619	Misc. and not specified operatives
	Transport Equipment Operatives
913	Bus drivers
906	Deliverymen and routemen
850	Fork lift and tow motor operatives
932	Motormen; mine, factory, logging camp, etc.
913	Taxicab drivers and chauffeurs
904	Truck drivers
	Transport equipment operatives--allocated

Appendix G--continued

DOT CODE	OCCUPATIONAL CLASSIFICATION
	Semiskilled Textile Occupations
785	Dressmakers and seamstresses, except factory
364	Dyers
929	Packers and wrappers, N.E.C.
786	Sewers and stitchers
68	Textile operatives
680	carding, lapping and combing
685	knitters, loopers and toppers
681	spinners, twisters and winders
683	weavers
689	textile operatives, N.E.C.
	Other Operatives
70-79	Assemblers
920	Bottling and canning operatives
361	Laundry and dry cleaning operatives
316	Meat cutters and butchers, except mfg.
316	Meat cutters and butchers, mfg.
920	Meat wrappers, retail trade
784	Milliners
93	Mine Operatives, N.E.C.
530	Mixing operatives
740	Painters, manufactured articles
714	Photographic process workers
	Misc. and not specified operatives
	LABORERS, EXCEPT FARM
419	Animal caretakers
860	Carpenters' helpers
899	Construction laborers, except carpenters' helpers
929	Freight and material handlers
407	Gardeners and grounds keepers, except farm
406	Horticulturists and floriculturists
409	Nurserymen
223	Stockhandlers
919	Teamsters
920	Warehousemen, N.E.C.
	Misc. and not specified laborers

Appendix G--continued

DOT CODE	OCCUPATIONAL CLASSIFICATION
42	FARMERS AND FARM MANAGERS
42	Farmers (Owners and Tenants)
096	Farm Management Advisors
42	Farm Managers
	FARM LABORERS AND FARM FOREMEN
42	Farm foremen
429	Farm laborers, unpaid family workers
429	Farm laborers, wage workers
429	Farm service laborers, self-employed
3	SERVICE WORKERS, EXCEPT PRIVATE HOUSEHOLD
38	Cleaning Service Workers
320	Boarding and lodginghouse keepers
323	Chambermaids and maids
382	Cleaners and charwomen
382	Janitors and sextons
31	Food Service Workers
312	Bartenders
313	Cooks
319	Food counter and fountain workers
311	Waiters and waitresses
319	Food service workers, N.E.C.
	Personal Service Workers
352	Airline stewardesses
355	Attendants, recreation and amusement
355	Attendants, personal services, N.E.C.
330	Barbers
355	Child care workers
339	Hairdressers and cosmetologists
	School monitor
195	Welfare service aids
37	Protective Service Workers
371	Crossing guards and bridge tenders
373	Firemen, fire protection
372	Guards and watchmen
375	Marshals, policemen, detectives, etc.

VT 017 559

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ABSTRACT - THIS REPORT SUMMARIZES THE FINDINGS, RECOMMENDATIONS, AND CONCLUSIONS OF AN EVALUATION STUDY MADE BY THE DELAWARE ADVISORY COUNCIL ON VOCATIONAL EDUCATION. FACTORS ON WHICH VOCATIONAL PROGRAMS WERE EVALUATED INCLUDE: (1) AVAILABILITY OF PROGRAMS, (2) COMMUNICATIONS, (3) ATTITUDES, (4) PLANNING AND IMPLEMENTATION, AND (5) INVOLVEMENT AND COMMUNICATIONS. RECOMMENDATIONS INCLUDE: (1) THE GOVERNOR AND HIS CABINET SHOULD CONTINUE TO ENDORSE AND SUPPORT VOCATIONAL AND CAREER EDUCATION, AND EFFORTS BE MADE TO LEGALLY ESTABLISH A COUNCIL ON EDUCATION, (2) THE COUNCIL TO BE ESTABLISHED SHOULD BE DIRECTED TO CONSIDER CAREER EDUCATION AS THE PRIORITY IN EDUCATION, (3) THE VOCATIONAL COMPONENT OF CAREER EDUCATION SHOULD RECEIVE THE COUNCIL'S PRIMARY ATTENTION, AND PLANS SHOULD BE MADE TO DEVELOP A COMPREHENSIVE STATEWIDE CAREER EDUCATION PROGRAM WITH DATA ALWAYS CURRENT, (4) THE GENERAL ASSEMBLY SHOULD BE AUTHORIZED TO TECHNICALLY AMEND VOCATIONAL LEGISLATION REGARDING PROGRAM OPERATION, THE ESTABLISHMENT OF A SYSTEMATIC MAINTENANCE PROGRAM FOR VOCATIONAL INSTRUCTIONAL EQUIPMENT, AND ASPECTS OF THE EMPLOYMENT-PLACEMENT SERVICE, AND (5) THE EDUCATIONAL ADMINISTRATIVE STAFF SHOULD ADJUST ITS POLICIES TO PERMIT CONSIDERATION OF ALTERNATIVE PROGRAMS, FACILITY UTILIZATION, AND THE ESTABLISHMENT OF A TASK FORCE FOR EVALUATIVE PURPOSES. (SN)

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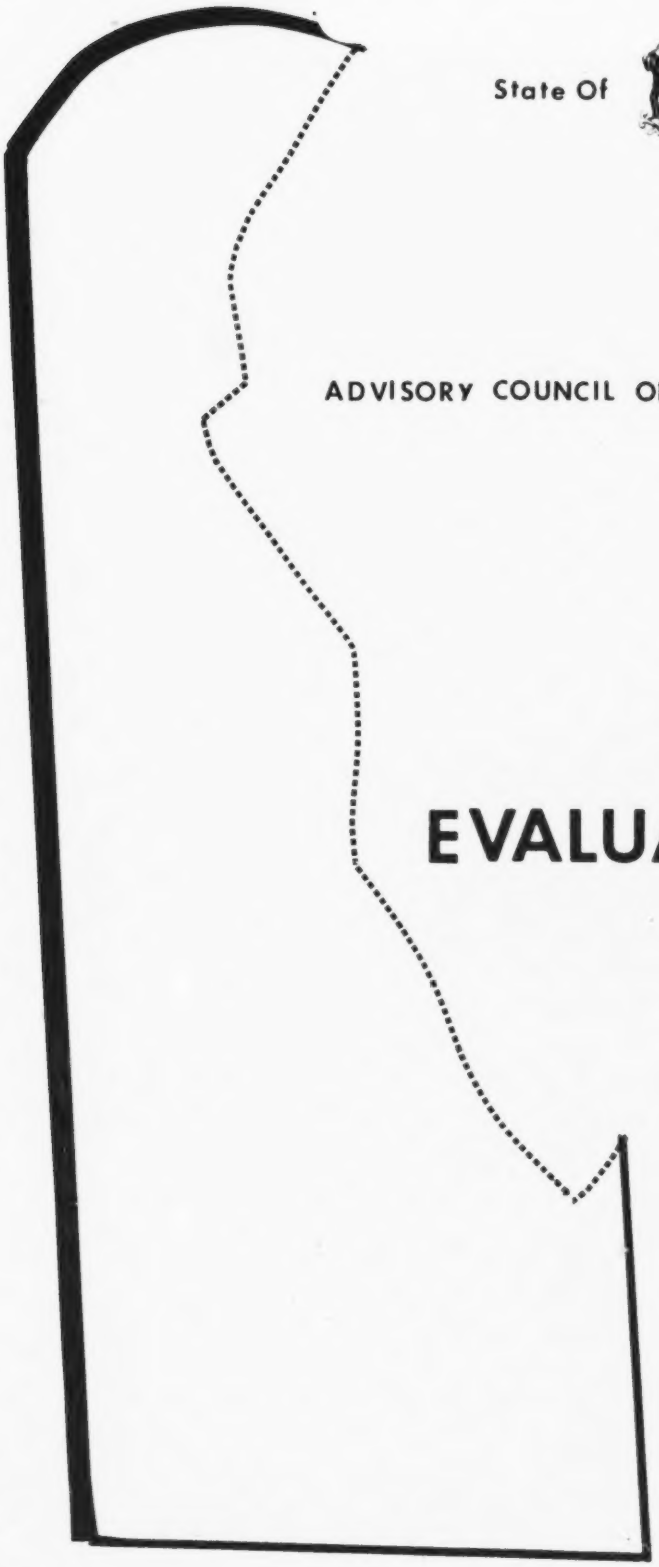

State Of Delaware

ADVISORY COUNCIL ON VOCATIONAL EDUCATION

EVALUATION 1971

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STATE OF DELAWARE

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EVALUATION 1971

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I. INTRODUCTION

If vocational education, in the foreseeable future, is to become the meaningful and relevant core around which academic learning experiences are developed, to produce a more effective and efficient system of Career Education in Delaware, fiscal year 1971, the period under review in this report, may well be identified as the turning point.

The Advisory Council on Vocational Education in Delaware, established by Governor Russell W. Peterson in March, 1969, under provisions of PL 90-576, The Vocational Education Amendments of 1968, has witnessed the emergence of a statewide commitment to vocational education endorsed by Governor Peterson and his Cabinet as "the number one educational priority of this administration"; has seen programs of action initiated by the State Board of Education, the State Superintendent of Public Instruction, Dr. Kenneth C. Madden, and the staff of the Department of Public Instruction; and has observed the adoption and support of this commitment by local educational agencies through the active response of their chief school officers.

In evaluating the total process and services of vocational education in Delaware, which is the legal responsibility of the Advisory Council, it becomes apparent that many of the activities and much of what exists in education is excellent:

1. Availability of Programs

   The geographic dimensions of Delaware and its excellent system of highways afford substantial access to the educational institutions of the State. Equally important to their location is the nature of the offerings of each of these institutions. As a result of recent legislation, every secondary school in the State will provide occupational/vocational education for the public they are designed to serve. Each of the three counties has an area vocational/technical center which, in addition to secondary programs provided on a full-time basis in New Castle County and a shared-time basis in Kent and Sussex Counties, also provide adult basic and vocational training as an extension to their services. The adult basic high school in Delaware, the James H. Groves School, operates programs in each of the County centers and in other facilities, to provide an integrated program of career education for

out-of-school youth and adults. The James H. Groves program, thereby, supports and promotes the vocational component of education and makes it readily accessible.

Delaware Technical and Community College, through Northern and Southern campuses, offers primarily post-secondary technical programs. It operates under an "open door" policy, a philosophy that invites innovation and continuous adjustment to meet specific individual and community needs, and a leadership that is responsive to the change that is characteristic of employment opportunities within the economy. Delaware Technical and Community College also provides a parallel program in cooperation with the University of Delaware for persons whose vocational aspirations require or suggest further formal education. Significant expansion of this institution, which will provide more programs for more persons with even greater accessibility, is planned for the immediate future.

Delaware State College, located in the Capitol, Dover, provides teacher training in Career Education as a major contribution to occupational/ vocational education in the State.

The University of Delaware, in Newark, in addition to the parallel program with Delaware Technical and Community College, offers opportunities for vocational development in a wide variety of professional careers.

Private institutions in the State, including Brandywine Junior College, Goldey Beacom Junior College, the Nursing School of Wilmington, Wesley College in Dover, and Wilmington College, provide complementary services to the citizens of Delaware in occupational-technical-vocational areas such as business administration, health occupations, distribution and marketing.

Public agencies, such as the Department of Labor, the Department of Health and Social Services, and other affiliated groups coordinated through the Consolidated Area Manpower Planning System (CAMPS) conduct educational training programs designed to bring people and employment opportunities together in Delaware.

The consensus of the Advisory Council is that the State of Delaware, in consideration of its relative size, provides a unique opportunity for its citizens to locate, participate in, and benefit from a comprehensive program of vocational exploration, occupational/technical training, retraining or rehabilitation, and employment opportunities and experiences that extend from the cradle to the grave. This is not to suggest that all people and their vocational needs are being served in Delaware, or even that adequate services are yet available, for such is not the case as will be presented later in this report. It is, rather, the recognition of the existence of an excellent base upon which an outstanding program of education can be built.

2. Communications

The size of Delaware, the central location of the Capitol, and the system of highways also provide unusual opportunities for conferences, meetings and seminars.

Communication is assisted as well by the organizational structure of vital State components. Most of the agencies in Delaware have recently consolidated by the creation of the Cabinet form of government. Each department is administered by a Secretary who serves upon the Governor's Cabinet which meets regularly. A present exception to this organizational pattern is education. However, the State Superintendent of Public Instruction meets with the Cabinet to represent elementary and secondary education and a representative of higher education serves in a similar capacity for that area of service.

The Council of College Presidents meets regularly and is often augmented to include representatives of elementary and secondary education, the private educational sector, the business and industrial community and government.

The State Superintendent meets bi-monthly with his Chief School Officers' Advisory Committee which consists of every local superintendent of education in the State. Quite often, these meetings are used as sounding boards for matters of policy to be forwarded to the State Board of

Education, legislation to be presented to the General Assembly and administrative procedures affecting the operation of the educational systems in Delaware.

The Delaware Advisory Council on Vocational Education meets regularly once a month. It conducts public meetings on the State Plan for Vocational Education and the Annual Evaluation Report. It is represented at all regular meetings of the State Board of Education and specific meetings of the Cabinet, the Chief School Officers' Advisory Committee and CAMPS. The Advisory Council in Delaware is represented through its Chairman on the National Advisory Council on Vocational Education, through its Executive Secretary on the National Committee of State Directors of Vocational Advisory Councils, and through its members on such state and national organizations as:

Delaware Manpower Council
Delaware Agency to Reduce Crime
American Association of School Administrators
American Association of Secondary School Principals
Delaware School Boards Association
Education Commission of the States
National Committee for Support of Public Schools
American Vocational Association
Delaware Association of Retarded Children
Delaware General Assembly
United Forces for Education of Delaware
Delaware Congress of PTA's

Delaware State Education Association
Delaware Vocational Association
Office Education Association (State & National)
Distributive Education Clubs of America (State & National)
Future Homemakers of America (State & National)
Future Farmers of America (State & National)
Future Business Leaders of America (State & National)
Vocational Industrial Clubs of America (State & National)
Sales, Marketing Executives, International
Delaware Chamber of Commerce
National Association of Manufacturers

Subject area advisory committees are the rule rather than the exception in Delaware. This is particularly true in the case of the area vocational technical centers, Delaware Technial and Community College and, to a lesser degree, each of the traditional vocational subject areas.

In Delaware, ideas and concepts can be disseminated quickly and effectively. It is not unusual to experience a meeting attended by the Governor, the entire State Board of Education, representatives of the local school districts, key members of the General Assembly, Advisory Council members, and numerous representatives of business and industry. Similar meetings are common on issues such as housing, labor problems, welfare, pollution control, drug abuse and other related concerns. Obviously, the opportunities for such communications can be of tremendous value in developing and implementing statewide programs in vocational and career education in Delaware.

3. Attitudes

In earlier reports, the Delaware Advisory Council on Vocational Education agreed with the National Advisory Council on the observation that vocational education was regarded as "a good thing for someone else's children". During the year under review, however, it became apparent that this attitude is experiencing substantial, if not rapid, change.

Under the leadership described above, several new practices were implemented by law which reflect this adjustment in thinking:

a. Additional funding became available (and remained available in the face of serious fiscal reexamination in the State) and served as incentive for the public secondary schools to expand and extend occupational/vocational programs at the local level.

b. Extended use of facilities and availability of instructional staff were provided through summer programs in area centers and local school districts. The impetus for such programs, which are funded primarily in

the area centers by State effort, came from funding by federal sources in previous years. It is in this program that the greatest growth and expansion of program services is anticipated at the secondary level in the immediate future. In addition to the complementary and supplementary instruction and experiences provided to students in regular vocational programs, this expansion serves as an exploratory opportunity and provides additional educational dimension for those persons who, for many reasons, were previously unable to participate in and benefit from such services.

c. Organized youth activities as an integral part of the programs of instruction in vocational and career education took a giant step forward during 1971. Greater attention, participation and involvement in this motivational approach to education became apparent on the part of governmental leaders, professional educators, the press, and the public at large as a result of an extremely modest investment in this area of education.

d. A promising effort to compete for more highly qualified instructors in vocational education was enacted which will provide salary increments for appropriate work experience outside the specific field of education. Such provision indicates recognition of the professional value and the dignity of expertise garnered in the world of work and equates it with the theoretical knowledge available in formal educational programs. While limited in scope to Trade and Industrial Education and Distributive Education at the present time, this practical policy has the potential to improve the quality of instruction in all programs of vocational and career education. An extension of this policy to other areas of education would provide incentive for educators to gain experience in the world of work and thereby result in greater understanding and support for the goals of career education.

Beyond legislative action and implementation, there were other indices that vocational education had begun its ascent from the basements of institutions in Delaware. Responding to the exhortations of United States Commissioner, Dr. Sidney P. Marland, and his predecessor, Dr. James E. Allen, to fuse academic and vocational preparation, a

unified, statewide commitment to Career Education evolved during 1971. As phrased by Governor Peterson in an address to the American Vocational Association meeting last December, reiterated at the Regional Conference on Vocational Education convened by request of Secretary Richardson of the Department of Health, Education and Welfare, and the annual meeting of Chief State School Officers in Washington, D. C. in June, Delaware is committed to provide an educational system which "assures every individual leaving our schools with preparation for and assistance in placement in satisfying, rewarding employment, a program of further education and training, or a suitable combination of both".

Such an ambitious undertaking requires the understanding and support of all public agencies, particularly the educational community, the business and industrial sector, labor, and the general public. In June of 1971, this total commitment was expressed in a statewide meeting to officials from the United States Office of Education as part of an offering to establish Delaware as a model state in Career Education.

There exists in Delaware today, primarily as a result of planning, development and implementation of programs during the past year, a great opportunity to establish a far-reaching, comprehensive and effective system of education with the occupational-technical-vocational component serving as the nucleus of the system. The attitudinal climate among government, educational, business and industrial leadership is more favorable than ever before in the past. There is a growing realization among students, their parents and the general public that practical, relevant educational opportunities should be available to all, whether they choose to enter the world of work immediately upon leaving school or at some point in the future. The facilities for such an undertaking and the expertise are in reasonably good supply and condition.

It remains for the leadership to assess critically the existing shortcomings, as expressed by the following concerns, plan for the specific improvements necessary to reach the stated educational goals of Delaware, and to proceed upon implementation with equal resolution concerning support that is expressed in philosophy.

II. PLANNING AND IMPLEMENTATION

At its ultimate point of value, the State Plan for Vocational Education should be the document that appropriately describes present programs and services, accurately predicts projected manpower opportunities and requirements and positively prescribes activities which have the potential to result in effective practices in vocational education.

As a minimal requirement, the State Plan for Vocational Education must serve as a compliance document with federal regulations to assure the eligibility of a state to engage in a partnership with the federal government to expend specific funds.

The Delaware State Plan for Vocational Education barely qualifies under minimum requirements. The State Plan in Delaware is, in fact, not a plan, but a report and an ambiguous, inaccurate and useless document, at best.

While federal "requirements" often dictate format and style and, therefore, should not be considered blameless in this pointless and expensive exercise, the State of Delaware compounds this experiment in frustration through the investment of time, talent and commensurate

resources of individuals, organizations and agencies in a misdirected attempt to equate quality of program with quantity of statistics.

The State Plan for Vocational Education should be a composite synthesis and analysis of local plans for vocational education which incorporates present thought on the status, development and direction of all activities in the State directed toward the development of individual capabilities as related to employment opportunities.

There is little evidence, and less assurance, that the State Plan for Vocational Education in Delaware involves significant input and, therefore, acceptance and support, from more than a handful of individuals. As examples, the following situations are cited:

1. With the exception of program proposals for the immediate period, there are no long-range plans for vocational education available from local educational agencies.
2. With the exception of a request for certification, accompanied by a "rough draft", the State Planning Office had no prior invitation to participate in the development of the State Plan.
3. Public agencies, coordinated under CAMPS, had no record of contact or consultation on the development of the State Plan for Vocational Education.

4. The Departments of Labor and Health and Social Services, beyond formality requests for present statistics, were not involved in short and long-range planning.
5. A majority of the professional staff of the Department of Public Instruction were not involved, in fact, unaware, of priorities in vocational education for the immediate future.
6. The State Advisory Council on Vocational Education was requested to certify the 1972 State Plan in June, 1971, with delivery to the federal agency by July 1, 1971, with less than forty days prior notice.

Beyond considerations of the intent for involvement by framers of PL 90-576, there is concern on the part of the Advisory Council for actual implementation of programs designed to meet priority considerations. Certain activities and programs have enjoyed attention and response in direct proportion to their categorical longevity, which is justifiable. There must also be appropriate attention accorded to activities and programs which suggest totally new concepts and may lack equal jurisdictional longevity. More specifically, financial support for program proposals is more probable;

(1) if the program extends or expands present classifications of programs;

(2) if the total request for funds matches, proportionately, total school enrollment;

(3) if the proposal suggests a minimum of time for implementation (preferably one year);

(4) if the proposal indicates that local priorities are based on State priorities.

While each and all of the above considerations are valid in supporting and funding programs, there persists a reluctance on the part of local districts to request funding for programs which involve experimentation or innovative practice, since such requests are usually denied in favor of more traditional practices. In addition, certain local agencies have reported that their requests to combine programs already approved, in an attempt to secure adequate funding for one program rather than inadequate funding for two or more, have often been denied.

The State Plan for Vocational Education must become a more responsive and viable document, inherent to, compatible with, and responsive in, an attempt to develop a comprehensive program for Career Education in Delaware that ultimately provides a direction towards a qualitative measurement of education in our State.

III. PEOPLE AND THEIR NEEDS

While facilities to house vocational programs, and the programs themselves, offer a wide variety of choices to individuals in Delaware; while virtually every age level from secondary through adult has been considered in planning and implementing vocational services; while flexibility and innovative practice have been encouraged and, in fact, have been enthusiastically supported and received; while vocational programs in Delaware serve a broad representation of the public ranging from special programs for individuals with learning disabilities to highly sophisticated craftsman training in full-time and shared-time institutions, including vocational training for the disadvantaged, the handicapped and the gifted, to programs serving the needs of technical and professional career-oriented individuals; and, while most of these services are available within less than an hour by automobile from any residence in the State; the evaluation of the situation must conclude that vocational education and career education at the present time are serving a very limited number of individuals and, therefore, are falling far short in meeting the educational needs of

the people of Delaware. It is one thing to serve every type of individual, it is quite another to serve, or to aspire to serve, every individual who can benefit from vocational and career education. The measurable returns to the State, in terms of participation and contributions to the economy and the quality of life, we feel, will be in direct proportion to our investment.

Justification of this position evolves from an analysis of input secured through the previously described activities of the Council from which the following examples are extracted.

1. In a presentation prepared to support the need for additional programs of occupational/vocational education in all local districts, it was stated that 40% of our students were victims of a "general" curriculum which led neither to employability nor to higher education. To correct this situation, it was established that approximately 500 additional units* would be necessary. During the year of review (FY 1971) 80 new units were funded. A subsequent clause

*Note: Delaware public schools are funded primarily by a State unit system. At the secondary level, a regular unit, which consists of the salary of a teacher, an operating allowance, and an equalization allowance, is based on twenty students.

in the legislation creating these units reduced the appropriations by approximately 40% resulting in less than 50 additional units. The allocation of new units for the coming year (FY 1972) was established at 267, subject to the same 40% reduction for a net total gain of less than 150 additional units. Hence, an identified need at the local level, at the present time, is discounting about 60% of the persons to be served. In all fairness, a gradual "phase-in period" was generally acceptable to the framers and supporters of this legislation and current planning indicates full availability of these services within three years. This example is cited in an effort to maintain the accomplishment of full availability of occupational/vocational education in Delaware at its present level of priority.

2. During a planning conference called by the Governor, with a representative group of Chief School Officers, members of the Advisory Council on Vocational Education, and key leaders of the General Assembly, the Superintendent of New Castle County Vocational Technical School District reported that qualified applications for admission to the area school exceeded by

300% the present capacity. The New Castle facility is a full-time operation. The other chiefs in attendance indicated that the availability of shared-time facilities and programs would result in even greater acceptability of vocational services. Upon further study, it was determined that a similar situation exists in Kent County concerning area shared-time centers. The need for additional services at this level is obvious and is in addition to the need for occupational program expansion in the local districts.

3. Delaware Technical and Community College, through two locations, is operating at capacity. The Georgetown (Sussex County) branch must be expanded to meet enrollment demand. An urban campus in Wilmington is under construction and sites in suburban New Castle County and Dover (Kent County) are in planning. A recent study on manpower needs projects employment requirements for persons trained at this (technical) level at more than four times the present anticipated output of graduates. Delaware Technical and Community College, in addition, has assumed manpower development and training

responsibilities, phases of adult basic education, the primary responsibility for the technical training of returning servicemen, a two-year parallel program with the University of Delaware and a major role in teacher training for occupational education in consortium with Delaware State College and the University. It is apparent that the demand, at the present time, far exceeds the supply of services at this level.

4. The principal of an evening adult school, located in an urban area identified as a pocket of unemployment, related to representatives of the Council that while Delaware is, indeed compact, and "on a map" programs seem to be accessible, the lack of mass transit to the sites, the lack of private means of transportation and the responsibility of dependent children were primary factors in the inability of facilities and programs to attract and hold persons for whom such services were designed. Inadequate funds for salaries, supplies and materials and an indifferent approach to public information were cited as secondary justifications for the failure of the educational system

to meet the vocational needs of persons in Delaware. These positions were reinforced by visitations and interviews in other areas of the State -- urban, suburban and rural. The inability of persons to become informed of services and to avail themselves of such services once they are informed is a major deficiency in our system.

5. Before the secondary level, there is little evidence that career orientation or vocational guidance exists in Delaware. At the secondary level, in fact, (student) members of the Council report that with minimum exceptions (usually reserved to teachers of traditional vocational subjects), there is little or no assistance from the school in obtaining knowledge on occupations or vocations, little or no assistance in initial placement upon graduation, or upon return after leaving.

   If our educational system is to be held accountable, they must give proportionate attention to placement in employment to placement in higher education. At the present time, the primary focus must be upon the former if we are to serve the needs of the majority of our students.

6. A recent communication from Dr. Edwin L. Rumpf, Acting Director, Division of Vocational and Technical Education, United States Office of Education, substantiates a position of the Council regarding the intent of PL 90-576. In essence, it delineates the philosophical services to the handicapped and the disadvantaged. A mandate of this legislation is that certain minimum percentages of available funds be utilized for programs for the handicapped and the disadvantaged. "Handicaps" and "Disadvantages" are relative terms. The earmarked percentages, according to Dr. Rumpf, and the Delaware Advisory Council on Vocational Education, are intended to provide services to those persons who cannot benefit from standard educational programs. To poll enrollments in vocational programs, or any programs for that matter, in an attempt to report numbers of persons being served who have physical, mental, social or financial deviations from a norm, rather than to identify those persons who need special services and then direct resources toward meeting those needs is, in our opinion, circumvention of the mandate.

It is our belief that at least the minimum amounts identified for such purposes should be directed toward the development of different programs for persons who cannot be served by existing "regular" programs in vocational education.

One such example might be, but in no manner limited to, emphasis upon our correctional system. An alarming number of our juvenile and adult offenders are returned after initial release. Officials of the correctional system and the State Parole Board expressed to Council representatives that a primary reason for the return of inmates was their "inability to adjust to society" which, in measurable terms, was really their inability to secure and hold employment and thereby, to become self-sufficient. The problem is the lack of employable skills - a proposed solution is more and better vocational education - instruction, facilities and services. This concept extends to the dropout, the drop-in, the misfit in our "comprehensive" schools. This segment of the population is being conveniently, but in the long run expensively, overlooked by our educational system.

7. The Council of College Presidents in Delaware has also identified occupational-technical-vocational and Career Education as a major priority. In establishing a consortium to provide teacher training programs for such purposes, they recognized a void in the area of trade and industrial education and in industrial arts education. Their study and analysis also revealed a need for expanded, updated and improved programs in preparing teachers for other areas of traditional vocational programs. There is, however, a serious void in professional education in Delaware which cannot afford to be ignored. Beyond meeting the demand for more highly qualified teachers for existing and expanding programs, the institutions of higher education must provide the technical and professional services necessary to prepare individuals for developing and implementing programs for persons with special needs. We need employment placement coordinators in our secondary and post-secondary institutions, we need personnel who will bring education to the people as well as those who will provide it when the people are able to

> come to established locations. We need specialists to work with the handicapped and the disadvantaged. We need para-professionals to assist in bringing people, education and employment opportunities together. If we intend to effect a more viable system of Career Education, based on a core of occupational/vocational instruction and activities, we must first provide the services to develop leadership in that direction. This must come from our institutions of higher education and precede the implementation of change.

The examples cited above may suggest that an even greater commitment to education, to Career Education, to vocational education is necessary in Delaware and this assessment is probably correct. To conclude that such an expansion of philosophy is necessarily more expensive or, in fact, prohibitive in cost, is not necessarily accurate. First, there is the possibility that such services can be implemented "instead of" rather than "in addition to" our present services. At the secondary level, for instance, we are referring to the same "40%" that we now house and attend to with questionable benefit.

At the post-secondary and adult level, we have reference to those who are underemployed, unemployed, potentially unemployable and thereby are less able to contribute to, participate in and benefit from a stronger economy. Other public agencies subsidize the unemployables, often at greater expense than a relevant education for the individual.

We feel that we cannot afford to ignore people and their educational needs. To begin and continue "from the cradle to the grave" an educational program that is directed toward full production and full employment, is to provide an educational system that is responsive to the goals of Delaware and the nation. Such goals are established to provide a higher standard and quality of living for all individuals. We cannot afford the alternatives.

IV. INVOLVEMENT AND COMMUNICATIONS

A very few years ago, all the persons who considered vocational education as the top priority of education in Delaware could have comfortably assembled in a room slightly larger than a telephone booth. Three years ago, a "public" hearing on the State Plan for Vocational Education attracted one private citizen.

During the year in review, a dramatic change in interest was evident. While "Career Education" has stimulated a great deal of attention and response, it is clear that the vocational education component of this total concept is the core around which this approach will revolve. It is also evident that an awareness exists regarding the need for more availability of occupational, technical and vocational education, that such services be improved in quality and that it be directed toward the employment needs of individuals and the community.

A great deal of the credit for this change in attitude is attributable to the educational leadership in the State. Vocational educators have found a more receptive audience and, more importantly, a more

responsive corps of school administrators, from the State Superintendent and his staff to the local chief school officers.

The State administration as well, under the direct, active leadership of the Governor, has adopted vocational and career education as the major remedy for most social ills. This attitude permeates all divisions of government through the active interest and participation of Cabinet Secretaries.

The legislature as well, particularly the Education Chairmen of the House and the Senate, Representative Clarice Heckert and Senator Everette Hale, have become especially interested and involved in developing and supporting vocational education efforts.

A great influence upon the leadership has been the demonstrated success of vocational education programs in the State. Local programs, through the impact of vocational youth organizations, the County vocational technical centers, and the dynamic results produced by Delaware Technical and Community College are particularly worthy of note.

The Delaware Advisory Council on Vocational Education, established during 1969, has, to a great extent, overcome earlier concerns that it might become a threat to vested authority and has realized, during the year in review, greater satisfaction in seeing its work result in positive change and improving services.

A three-day joint meeting of the Advisory Council, the State Board of Education, the State Superintendent and members of his staff, was held in October, 1970. The purposes of the meeting were to review the 1970 Evaluation Report of the Council, to determine specific areas of immediate priority, and to plan for effective implementation of necessary programs of action.

An outcome of that meeting was that the Advisory Council was invited to bring specific and general recommendations to the State Board of Education, through the State Superintendent, and was afforded full consultation courtesy at each regular meeting of the State Board. Subsequently, Council members and staff were invited to participate in planning and policy development committees of the Department of Public Instruction, the Chief School Officers Advisory Committee and other important groups. A member of the State Board of Education attended the regular monthly meetings of the Advisory Council as liaison representative of the State Board.

The Chairman and the Executive Secretary of the Council were invited by the Governor on three occasions to make presentations to the Cabinet.

Council members and staff were consulted by members and committees of the State Legislature in the development of legislation and the State budget.

Several direct results are attributable to this acceptance of Council role, responsibility and cooperation.

1. The Advisory Council was totally involved in the planning, writing and presentation of a proposal to the United States Office of Education which resulted in Delaware being awarded a significant grant to design career education model programs in curriculum, youth organizations and a data management system. The Council, and its staff, continues to serve on the Task Force which plans and directs activities in these model programs.
2. Acting upon major recommendations of the Advisory Council contained in the Evaluation Report 1970, the State Board of Education, the State Superintendent and staff initiated the following actions:
   a. Took steps to transfer responsibility and authority for continuing and adult vocational education to Delaware Technical and Community College.
   b. Initiated contacts and coordinated activities to obtain federal and state funds for a consortium of the institutions of higher

education in Delaware to develop a teacher training program in occupational education. As a result, a Director was employed, planning was continued and the program was initiated in the needed areas of trade and industrial education.

c. Encouraged, supported and coordinated funding of vocational youth organizations in Delaware. (The legislation permitting such activity has subsequently been used as a model in other states.) School Board members, the State Superintendent, the Department of Public Instruction staff, and local school administrators actively participated in local, state and national activities of each of the youth organizations.

d. Adopted an improved delivery system for the processing of program proposals from local districts, thereby providing more planning time, greater flexibility in implementing programs and more appropriate use of State staff in consultation and supervision of programs.

e. Recommended as a legislative priority funding to provide for the systematic retirement, replacement and repair of instructional equipment in vocational education.

f. Gave priority, through a statement of policy, to programs designed to serve the needs of disadvantaged persons.

g. Supported legislation to provide summer programs in vocational education, and in addition, when available State funds were limited, reinforced priority by committing federal funds to this area.

3. The Governor, Cabinet Secretaries and State Agencies utilized the services and advice of the Advisory Council in several areas, including correctional practices, health and social services, manpower (labor) programs and public information programs.

4. The Chairman of the Advisory Council, Mrs. Louis Bachman, Sr., serves on the National Advisory Council on Vocational Education and was primarily responsible for that body selecting Delaware as a pilot state in which

to develop a comprehensive program of public information on vocational education. The National Council held its regular meeting in June, 1971, in Delaware, thereby bringing local attention to the goals and objectives of vocational education.

5. The Press, radio and television have given more proportionate attention to vocational and career education during the past year. Council members and staff have been invited to contribute, appear and participate in activities of the mass media operating in the State to promote and publicize the programs, activities and direction of education.

The promising growth in acceptance of the Advisory Council, its activities and its recommendations, during the past year, holds promise for even more satisfactory involvement and communications in the future, particularly in regard to continuing concerns.

V. CONTINUING CONCERNS

A particular concern of the Advisory Council on Vocational Education is its inability to secure consideration, commitment and action upon vital linkages necessary to bring people and education, people and employment, and education and employment together in a viable force.

Usually, such linkages require deviations from standard acceptable practices, and require further steps. At such crucial points, progress slows or halts, for example:

- educational services stop just short of placement in employment or a combination of further education and employment or expansion of cooperative programs;
- data collection, dissemination and management activities stop just short of identifying specific persons to be served, by name, by Social Security number, by level of training, by social characteristics, by economic restriction, so that they prevent correlation

and coordination with information available regarding present and projected employment opportunities and, equally important, they frustrate attempts to identify to what extent the underemployed, the unemployed and the indigent can be better served by additional or adjusted programs of education;

- agency "cooperation and coordination" stop just short of relinquishing autonomy and jurisdiction, even when it becomes obvious that another agency can complement and supplement or even replace existing activities more effectively and efficiently;
- availability of educational services stop just short of bringing school to the people when it is apparent that, for several reasons, people are unable, or unwilling, to come to school;
- programs for persons with special needs go only so far and so long until they tend to "interfere" with standard, although admittedly, ineffective programs.

More specifically, and perhaps more positively, the Council seeks answers to such questions as:

> What is so sacred about the "required" subjects and hours necessary for a Delaware secondary diploma? Are the needs the same for all individuals?
>
> Are specific classes, in fixed places during established hours, days and months serving the needs of the consumer or maintaining the security of the establishment?
>
> If vocational and career education is the number one priority of education, why is it not among the "required" subjects for graduation, if such must be? (In fact, why can't it replace some of them?)
>
> If organized youth activities have an educational purpose in leadership development, civic responsibility, social awareness, and vocational understanding, and having demonstrated their ability to achieve this, are advertised as "integral" parts of the programs of instruction, why are such activities conducted

"outside the walls" considered to be "interruptions of the education process" in many schools?

If schools serve as placement agencies for institutions of higher education, which they do, and which they should, why do they not serve as employment agencies as well since a majority of the students will not be placed in higher education?

If vocational and career education is a priority in Delaware and the nation, why do colleges and universities not incorporate into teacher education programs theory and practice that will qualify educators to meet this priority?

Why, in fact, does not State certification in Delaware require background in vocational and career education for all teachers, particularly for those with advanced placement on the salary schedule?

Are we really "protecting" the pocketbook of the taxpayer when we;

delay his investment in employment training and services and subsidize those we "could not afford" to train?

ignore the inevitable necessity of reparing or replacing expensive instructional equipment until it becomes inoperable, or worse, obsolete, without planning and providing for this eventuality in advance?

continue educational programs that lead neither to higher education, nor to employment or worse, to jobs that will not exist?

Are we realizing an acceptable return on our investment in the decision-making process? Do our decision makers decide or apply formulae? Do our administrators administrate or commiserate? Do our supervisors supervise or improvise? Do our advisors advise or chastise?

Could many of our "professional" functions be more efficiently, effectively and competently accomplished by career oriented secretaries, para-professionals and teacher aides?

Can, in fact, more relevant educational services be delivered at the same or lesser costs?

What is the "NOW" purpose of public education?

VI. CONCLUSIONS AND RECOMMENDATIONS

The vocational education components of career education in Delaware have earned and been awarded a focus during 1971 that has been unequalled since 1916 and the passage of the Smith-Hughes Act, if historical documentation and the testimony of witnesses to the facts are to be considered.

These educational activities have enjoyed the attention, commitment and positive actions of a genuinely significant percentage of the leaders of government, education, business and industry and the lay public during the past year.

However, it would indeed be inaccurate to claim or suggest that vocational education in Delaware is satisfactory or adequate. It is not. It would also be an injustice to award either undue blame or credit to the present leadership.

The present position reflects more than a half-century of dedication, cooperation and effort in our behalf. To use the preceding decade as a bench mark, for instance, eliminates consideration of the contributions of many leaders, public-spirited citizens and taxpayers over the past half-century to our benefit in Delaware. As illustration, however, the year 1961 may be significant in reinforcing our conclusions.

September 11, 1961, is a significant date in the history of education in the State of Delaware. On that date, approximately 360 secondary students from Sussex County attended, for the first time, a new county vocational center in Georgetown. The philosophy of the school, its functional policies and most of its operational procedures were based on the recommendations of a study conducted by Paul Hodgson, Assistant State Superintendent for Vocational Education in Delaware. While he was primarily responsible for reducing an ambitious concept to a workable plan, Hodgson was definite in pointing out that "these additional opportunities had been made available through the cooperation of many people: the State Board for Vocational Education, the State Legislature, the State Department of Public Instruction, local school administrators, guidance personnel, teachers, students, parents and the interested public". With the assistance of these groups, Hodgson was able to recommend and implement a plan that "would be the most effective method of providing vocational-technical training in line with the needs and within the possibility of accomplishment in Sussex County".

Shortly thereafter, of course, Kent and New Castle County were to plan and implement services that were "in line with the needs and possibilities of accomplishment" in their respective areas.

Under the administration of Governor Charles Terry (1964-1968), Delaware Technical and Community College was conceived and established, once again with the "cooperation of many individuals and groups". The success of this institution is testimony to their foresight.

The "Educational Advancement Act of 1968" engineered under the leadership of State Superintendent, Richard P. Gousha, and involving such organizations as the United Forces for Education in Delaware, in addition to the previously mentioned private and public support, accomplished "consolidation, reorganization and integration", all of which improved, expanded and extended opportunities in vocational education.

The leadership has changed, the priorities have been adjusted, but the progress has been constant.

To the credit of those leaders who have been replaced and to those who have replaced them they have

not allowed personal or political influence to impede the progress of vocational education toward its present state of maturity.

If 1961 can serve as a bench mark, so may 1971 as we have suggested in our introductory remarks.

Vocational education must build upon its preferred position in 1971 and proceed toward an educational system that is in fact satisfactory, adequate and effective in meeting the career and life aspirations and needs of the citizens of Delaware.

Beyond this ambition, Delaware has the opportunity to lead the nation in the design, implementation and profitability of career education.

The Delaware Advisory Council on Vocational Education is anxious to be recorded in future history as one of the major contributors to that position.

With that purpose in mind, the following recommendations are submitted:

I. That the Governor of Delaware and the Cabinet Secretaries continue to endorse and support vocational and career education in Delaware; that efforts to legally establish a Council on Education be reinforced to include representation at the Cabinet level; that this Council be directed to consider career

education as the priority in education in Delaware; that the vocational component of career education receive the primary attention of the Council; or, in the necessity of an alternative to legislative action, the Governor appoint, by Executive Order, a State Council on Career Education under the auspices of the career education model proposal. In either case, this Council should be charged with responsibility and accountability for the development of a comprehensive State Plan for Career Education that extends from early childhood to retirement. It is further recommended that this Council have commensurate authority to require that all organizations in the State utilizing public funds for manpower training and vocational education programs participate and contribute to the development of this Plan; that the Plan include current, valid and reliable data pertaining to employment needs and opportunities in the community as well as specific identification of persons who are unemployed, underemployed and are available for full-time or part-time training or retraining; that the Plan define levels of training necessary to meet

the human and employment needs of the community and that it fix specific responsibility, authority, and accountability upon specific institutions, organizations and individuals for establishing and implementing such programs; that the Plan establish measurable short range and long range objectives; that it set forth a definite plan of action to meet those objectives and that it provide a definite program of continuing evaluation. All existing State Plans for vocational education, manpower development, job training and retraining, etc. should become smaller integral parts of the State Plan for Career Education; and that the State Planning Office be designated as the responsible agency to collect, assimilate and disseminate information to all agencies with responsibilities and authorities within the State Plan for Career Education.

II. That the General Assembly of the State of Delaware provide enabling legislation and financial appropriation to support recommendation I and also:

a. to technically amend existing legislation affecting vocational education, particularly Sections 1703 and 1706, Title 14, Delaware Code, dealing with deduction factors to "regular" units

in proportion to "vocational" units. The legislation, in its present form, confuses as well as discourages the attempts to implement vocational education services. It also creates the necessity for arithmetical exercise thereby adding expense to the process. In addition, it is vitally important that the timetable for full availability of vocational programs be continued as a priority;

b. to establish a constant factor for operating vocational education programs in area centers. Either an average of three times the existing Division II allotments should be accorded the centers; or that the realistic costs of such programs as electronics, refrigeration, welding, etc., should be allowed;

c. to establish a program for the systematic retirement, repair and/or replacement of worn, damaged and obsolete instructional equipment in vocational education; and

that the schedule not exceed ten (10) years to be based upon present market value of the existing inventory;

d. to provide each school district in the State with employment-placement officers at a ratio of not less than 500:1; that this allowance be beyond present unit appropriations; and that the Department of Labor and other agencies participate in the planning, development and implementation of this service.

III. That the State Board of Education, the State Superintendent of Public Instruction, and the Department of Public Instruction, adjust existing policies to permit:

a. consideration of alternatives to the present procedures and formulae for construction of education facilities in vocational education. Changes in employment opportunities and the labor market often necessitate changes in program offerings. Since facilities are, or should be, erected to house programs and services, facilities should be flexible and mobile, if programs and services need to be changed periodically.

Certain programs are more properly implemented on a shared-time basis, others are more effectively and efficiently operated on a full-time basis. Technological change, shifts in population and economic factors dictate adjustments in program offerings and, hence, facilities. Mobile and modular units should be utilized to the extent possible and practical;

b. fuller utilization of facilities, equipment and personnel in vocational education; that the "school day" be extended beyond the present limitations; that the "school week" include weekends; and that the "school year" have neither minimum nor maximum restrictions;

c. improved, expanded and extended benefits from the educational services provided by vocational youth organizations; that priority in funding be provided to program proposals which include such organizations as integral parts of the instructional program; that budgetary plans and requests

reflect more adequately the financial need of these programs; that supervisory staff be encouraged to develop and implement additional services to such programs; and that commensurate consideration in terms of time, travel, expenses, secretarial assistance and performance evaluation be accorded to State advisors to youth organizations;

d. the establishment of a Department of Public Instruction Task Force with the specific assignment to evaluate existing services, plan, develop and implement programs for persons with special needs, particularly the disadvantaged and the handicapped.

In addition, it is recommended that the State Board of Education initiate action immediately to reevaluate all curricular requirements in the public schools to determine the present relevancy of required and suggested program and subject offerings to the existing needs of the consumers and the markets for their talents and skills. Concurrent with this evaluation should be an examination of certification requirements and

related salary increments of professional educators in Delaware to determine whether or not the criteria upon which they were originally established are currently valid.

Finally, the Department of Public Instruction itself should clearly define its philosophy, priorities and role as a service agency in Delaware. Outcomes of an evaluation initiated in this regard more than a year ago are presently vague. If the Department is to serve as an innovative force, a regulatory body, a change agent, a coordination unit, a consulting agency or a combination of any or all of these, the purpose and objectives should be clearly communicated so that fair judgments can be made. Too often, this agency serves as the whipping boy or the driving force without valid justification. As succinctly observed in an earlier attempt at evaluation, "If the Department of Public Instruction is the answer - what was the question?"

IV. That the institutions of higher education in Delaware serve as a model for the nation in:

a. conducting an immediate reexamination and evaluation of admission policies which discourage students at the secondary level to engage in occupational/vocational pursuits at the secondary level at the risk of losing admission to the "college of their choice";

b. conducting a similar evaluation of present program offerings in professional career education as related to present and projected professional career opportunities;

c. conducting an objective analysis and evaluation of teacher education programs to determine the present relevancy of such programs to the educational needs of the persons to be served;

d. implementing the recommendations forthcoming from the research suggested above.

V. That local school districts develop short, middle and long range plans for vocational and career education which include introductory and exploratory programs at the elementary level of

education, cooperative and work-study programs at the secondary level and employment placement services at the secondary and post-secondary level; that they also develop and implement plans to afford maximum use of facilities, equipment and personnel to the communities they serve.

VI. That other private and public organizations avail themselves of the facilities and services that public education is required to deliver; that they make their educational requirements known to the leadership in government and education; that they participate actively in developing the programs, services and policies that affect their operations.

VII. That the citizens of Delaware continue to demand performance, relevancy and accountability from their system of public education. In the final analysis, they are primarily responsible for all it does or fails to do.

STATE OF DELAWARE

ADVISORY COUNCIL ON VOCATIONAL EDUCATION

SPECIALIZING IN HIRE EDUCATION
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EVALUATION 1971

The Delaware Advisory Council on Vocational Education wishes to recognize certain corrections and qualifications brought to our attention after this report had been assembled.

1. The reference to the "Consolidated" Manpower Planning System (CAMPS) on page 4 should be correctly titled as the "Cooperative" Area Manpower Planning System (CAMPS).

2. The reference to State Board actions on page 32, 2.a., regarding continuing and adult education, should be further clarified.

   During the year of review, the State Board of Education transferred responsibility and authority for the Manpower Development and Training Act and for programs in Licensed Practical Nursing to Delaware Technical and Community College when it was determined that such programs could be more effectively and efficiently operated by that agency. Many excellent adult programs continue under local and state jurisdiction.

Discover Delaware . . . . the State that started a nation.

VT 017 561

VT 017 561
PREPARING THE DISADVANTAGED FOR THE WORLD OF WORK. A REPORT OF A STATE-WIDE INSTITUTE FOR HIGH SCHOOL TEACHERS AND SOME SELECTED RELATED PROFESSIONALS.

NORTH CAROLINA STATE UNIV., RALEIGH.; NORTH CAROLINA STATE DEPT. OF PUBLIC INSTRUCTION, RALEIGH.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 70 67P. REPORT OF STATE-WIDE INST. FOR HIGH SCHOOL TEACHERS AND SOME SELECTED RELATED PROFESSIONALS (JUNE 8-26, 1970).

DESCRIPTORS - *INSTITUTES (TRAINING PROGRAMS); *INSERVICE TEACHER EDUCATION; *SECONDARY SCHOOL TEACHERS; *VOCATIONAL EDUCATION TEACHERS; *DISADVANTAGED YOUTH; OCCUPATIONAL GUIDANCE; GUIDANCE COUNSELING; EFFECTIVE TEACHING; STATEWIDE PLANNING; PUBLIC SCHOOL TEACHERS; PROGRAM EVALUATION
IDENTIFIERS - *NORTH CAROLINA

ABSTRACT - A STATEWIDE INSTITUTE TO PROVIDE INSERVICE EDUCATION FOR NORTH CAROLINA TEACHERS WORKING WITH DISADVANTAGED STUDENTS WAS HELD JUNE 8-26, 1970. THE INSTITUTE WAS DESIGNED TO HELP PUBLIC HIGH SCHOOL TEACHERS, MOSTLY TEACHERS OF OCCUPATIONAL EDUCATION WITH SOME IN GENERAL EDUCATION AND GUIDANCE COUNSELING, IN UNDERSTANDING THE DISADVANTAGED STUDENT, IN DEVELOPING EFFECTIVE APPROACHES FOR TEACHING THE DISADVANTAGED, AND IN CONSIDERING TEACHING RESOURCES. THE TEACHERS PARTICIPATED IN FIELD STUDIES AND TOURS OF AGENCIES SERVING THE DISADVANTAGED IN ADDITION TO THEIR FULL SESSIONS AND SMALL GROUP WORKSHOPS. PARTICIPANT EVALUATION OF THE INSTITUTE INDICATED THAT PROGRAM CONTENT AND PRESENTATION WERE CONSIDERED SUCCESSFUL. THE COMPREHENSIVE EVALUATION INSTRUMENT, INSTITUTE PROGRAM, AND LIST OF PARTICIPANTS ARE APPENDED. (MF)

PREPARING THE DISADVANTAGED FOR THE WORLD OF WORK

A Report of
A State-Wide Institute for High School Teachers
and Some Selected Related Professionals
June 8-26, 1970

TEXTON R. MILLER, DIRECTOR
School of Education

VT017561

North Carolina State University
in cooperation with
North Carolina State Department of Public Instruction

U.S. DEPARTMENT OF HEALTH,
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PREFACE

Recent national and state priorities in Occupational Education have placed a premium on educational programs to more effectively meet the needs of those students known as the "disadvantaged."

Although special programs for the disadvantaged have dramatically increased during the past year, few teachers have been provided the time or professional help needed to adequately plan their programs.

This institute was designed to provide an opportunity for high school teachers of Occupational Education, primarily, to share their experiences related to the disadvantaged, to receive group and individual assistance from professional consultants, and to consider new material resources.

Special recognition is due the following persons for their valuable service as members of the planning committee:

Dr. Joseph Clary, Secretary to N. C. Advisory Committee on Occupational Education

Mr. Walter Cox, Specialist in Introductions to Vocations, North Carolina State University

Dr. Joseph Nerden, Professor of Vocational and Technical Education, North Carolina State University

Mr. John Wooten, Associate Superintendent, Lenoir County Schools, Lenoir, North Carolina

Mr. Nurham Warwick, Chief Consultant on Programs for the Disadvantaged, North Carolina State Department of Public Instruction

SUMMARY

For the purpose of improved professional competence some eighty-five public school personnel participated in a 3 week institute designed for teachers of disadvantaged pupils. Most of the group were teachers of occupational education but there were ten teachers of general education and ten guidance counselors.

This was a cooperative venture between the North Carolina State Department of Public Instruction and North Carolina State University. Mr. Nurham Warwick, Chief Consultant for Programs for the Disadvantaged, and Dr. T. R. Miller, North Carolina State University, were in direct charge of the operations. The State Department of Public Instruction financed the operations.

A planning committee representing the University, the State Department and the public school system designed the program. It included professional consultants, teacher and administrator specialists, and representatives from State and Federal organizations involved in programs for the disadvantaged.

The institute took place at North Carolina State University under the direction of T. R. Miller, Associate Professor, School of Education. Morning sessions were primarily for presentations, and small group discussions accounted for the afternoons. Three, full-day, study trips were conducted. They included visits to Stonewall Jackson Institution for first offenders, Murdock Center for rehabilitation, Durham Half-Way House, local social services agencies, and a tour of low economic level housing areas in which Wake County Opportunities, Inc. had programs of help.

Extremely favorable reactions were accorded the institute by the participants with suggestions for additional institutes.

Follow-up is expected to be conducted during the coming year.

STATE-WIDE INSTITUTE
FOR
TEACHERS OF THE DISADVANTAGED

INTRODUCTION

The Problem

This institute was designed to provide inservice education for a group of teachers in North Carolina who had for the past year been working specifically with disadvantaged students. The first priority group to be served was some sixty teachers of occupational education who had full-time teaching assignments with disadvantaged students. Also to be considered was a larger group of teachers having part of their teaching assignment with the disadvantaged.

This was the first state-wide institute for teachers of the disadvantaged. Except for a very few workshops sponsored by local administrative units, teachers of occupational education had been left to their own resources to provide special programs for the disadvantaged. Recognizing the needs of these teachers, the leadership of the Department of Public Instruction sought assistance from the School of Education, North Carolina State University, to design, develop, and conduct this Institute.

Purpose and Objectives

The primary purpose of the institute seemed clear from the start: To improve the professional abilities of the participants to work more effectively with the disadvantaged. Three specific objectives were emphasized: To assist participants to identify and understand

better the disadvantaged student; To assist participants in developing effective approaches for teaching the disadvantaged; To assist participants to assemble and develop effective teaching resources.

METHODS AND PROCEDURES

From the beginning this institute was a cooperative venture between the N. C. State Department of Public Instruction and the School of Education at N. C. State University. Mr. Nurham Warwick, Chief Consultant for Programs for the Disadvantaged and Handicapped took the leadership for the State Department, and Dr. T. R. Miller represented the School of Education. It was agreed that Mr. Warwick would lead in identifying the participants to be served and to seek confirmation of a proposed budget, while Dr. Miller would establish a planning committee to design and develop the Institute program which would be held on the North Carolina State University campus.

Participants

Invitations to attend the institute were extended through local administrators to all teachers of occupational education who were working full time with disadvantaged students. Where circumstances dictated, teachers with part-time assignments with the disadvantaged could be substituted.

The project design called for the following balance of occupational education teachers and other professional workers with the disadvantaged:

Teachers of Occupational Education	60
Teachers of General Education	10
Guidance Counselors	10
Representatives from Vocational Rehabilitation	5
Representatives from the Social Services	5
TOTAL	90

The rationale for including professionals other than occupational education teachers was that the problem of teaching the disadvantaged was complex and influenced greatly by the contributions of these other groups. It was considered important that teachers of occupational education would have this opportunity to understand and appreciate more fully the contributions of these other groups.

It was recognized that this was a reciprocal process and should have similar effects upon those not teachers of occupational education. It will be noted later that this "mix" was an important element in the success of the institute.

A total of 85 participants completed the three-week institute. Of these, 59 were occupational education teachers, 10 teachers of general education, 14 from the field of guidance, and 2 from the vocational rehabilitation services. However, there were additional inputs from both the social services department and vocational rehabilitation as workers from these groups made formal presentations, led small group discussions, and served during the field study days.

Resources

The State Department of Public Instruction provided all funds for the Institute. Local administrative units were reimbursed fully for the salaries of teachers attending the institute. In addition teachers were reimbursed for travel and living expenses attendant to the institute.

Funds were also available to pay for consultants' transportation expenses incurred in conducting field trips with the participants,

salary of the director, secretarial help, and supplies. The Dean of the School of Education handled these expenses by means of a contract with the State Department of Public Instruction.

Resources in the sense of contributions to the institute program came from four sources: the State Department of Public Instruction personnel, the N. C. State University School of Education and the Department of Anthropology and Sociology, local county school administrative units, the State Department of Community Colleges, Wake Opportunities, Inc., Manpower Development Corporation (Chapel Hill), and the North Carolina Social Services agencies and selected county services.

Planning Committee

One of the first actions of the Director of the Institute was to select a planning committee which designed the program. This committee of five persons met with the director three times as a group and many times in individual conferences. The items of objectives, content, process and evaluation were some of the more important considerations. Decisions were made upon consultants needed, field trips desired, and facilities to be used.

All of the Planning Committee became personally involved with a specific portion of the Institute program. Dr. Clary and Mr. Warwick accepted the problem of arranging for the field studies which enabled teachers to study the Social Services and Vocational Rehabilitation services in action. Mr. Walter Cox was primarily responsible for "perting" the development of the institute and also developed a dramatic presentation, "classroom organization." In addition he arranged for production by Mr. Ken Herman (Community College Specialist) of some video tapes of disadvantaged students

being taught in a local school. Mrs. Sue Sutton, Lenoir County Guidance Counselor, who was familiar with the local school programs, presented the video tapes in small group sessions. Professor J. T. Nerden was chosen to provide the keynote address, and Mr. John Wooten developed a presentation based on his successful experience with helping his teachers revise a curriculum for disadvantaged students.

Director's Role

The Director of the Institute had the duties of molding the suggestions of the Planning Committee into the program format, providing for evaluation feedback to the Institute, arranging for facilities, completing the staff of the consultants, and preparing the final report of the Institute.

An important part of the Director's preparation for the Institute consisted of visits to local schools to see specific programs and discuss the needs and interests of teachers engaged in teaching the disadvantaged. Three specific aids to the Institute Program which resulted from these visits deserve special mention. The potential of the curriculum development project established in the Lenoir County Schools was revealed and included in the Institute Program. Second, personnel from West Columbus County School, who had developed special aid for students with deficiencies in reading and mathematics, agreed to a part in the Institute program. Finally, a visit with several teachers operating the J.E.W.T. program (Junior Educational Work Training) in the Durham City Schools identified several

supplementary resource personnel who later provided ideas and inspiration for the small group sessions.

Because of the lack of lead-time for the Institute, a survey of teacher needs and interests was not effectively utilized in the planning for the institute. Future institutes should not suffer from this same handicap.

Program Format

Length: The Planning Committee concluded that three weeks was the optimum time needed to reach the objectives of the institute. This much would be needed to integrate the field trips believed necessary to develop a realistic appreciation and understanding of resources beyond the school. Further, it would require considerable time for the small group work believed necessary to encourage participants' decisions to make changes in their teaching programs.

Mornings: In general, morning sessions were allotted for presentations before the total group of participants. Provisions were made to insure audience participation following each presentation. Nearly all presentations included visual aids for variety. Participants were responsible for the final two morning sessions. One session consisted of demonstrations on "teaching the disadvantaged" by each of the six small groups. The final morning session involved "digest" reports by two representatives of each group.

Afternoons: The basic concept for the afternoon sessions was to provide opportunity for the participants to work in small groups with a variety of activities. For selected sessions (see program), consultants from the morning presentations rotated to the various groups

for individual questions. In the case of the morning presentation on audio-visual materials, afternoon groups experienced an intensive "hands-on" session, including production of four overhead projectiles for their teaching program. Video tapes of classroom teaching were utilized in another set of the small group meetings.

Field Studies: In the program design three full days were set aside for field studies. The objective was to provide a more realistic experience with some of those public agencies with responsibilities for disadvantaged persons and which have considerable untapped potential for assisting teachers in meeting needs of their disadvantaged students. Further, it was recognized by these agencies that teacher cooperation had potential for increased effectiveness of the agency with the disadvantaged.

Wake Opportunities Incorporated, a federal program working directly with disadvantaged families, provided an overview of their services and conducted a walking-tour of a "blighted" neighborhood. Several of the Wake Opportunities Staff were involved in providing the small group tours.

The second field study was arranged to reveal the programs under the direction of Vocational Rehabilitation Services. Three separate trips were established to take about 30 of the participants to Murdock Center, 40 of the group to Stonewall Jackson Correctional Institute, and the remaining group (primarily guidance counselors) to a visit of the Vocational Rehabilitation facilities in Raleigh and to a "Sheltered Workshop" in Durham. Participant ratings on these trips were extremely high, showing an average score of 3.86, 3.95 and 3.75 out of a possible score of 4.

The third field study established the opportunity for participants to study their local county social agency. The State Social Services Agency coordinated this program, making the contacts with local personnel and explaining the needs of the teachers. Arrangements included introductions to local workers and the status of their programs and visits to recipients of these programs. This phase of the institute received an average rating of 3.8, an extremely high score.

Finale: The final session of the Institute was a luncheon program held at the University Faculty Club. The program included a "mystery speaker", revealed as Dr. Jerome Melton, Assistant State Superintendent of Public Instruction.

Group leaders and their secretaries as well as many of the Institute consultants were introduced. Engraved "Certificates of Participation in the Institute" were awarded each teacher. Final evaluation reports were collected here, and previously completed reimbursement requests submitted.

Analysis: The final day of the Institute was allotted to the participants to develop a written report of the Institute to be delivered to their school administrators and to the Director of the Institute. A guide sheet suggesting key items to be included was furnished to each participant (see Appendix F-4 for guidesheet). The emphasis was placed on implications of the Institute for changing teacher role and local program.

Library and Materials

Special library facilities were established in the University library next to Harrelson Hall which housed the Institute. Mrs. Marie

Moffitt, Consultant with the State Department of Public Instruction, provided all of the materials and a bibliography for each participant. The library was open both day and evening hours for use by the participants.

A three-ring notebook, with outside lettering pertaining to the Institute, was furnished each person at the opening session. It contained several types of material including the Institute Program Schedule, as well as the 1970 state guide for programs concerning the disadvantaged and handicapped. (The bibliography of materials furnished to participants may be obtained by writing to Mr. Nurham Warwick, N. C. State Department of Public Instruction.)

Evaluation Format

Since nearly forty percent of the Institute time was allotted to small group work, it was considered important to provide a feedback to the total group that would be as immediate as feasible, and to provide some written record of the ideas and practices considered most important by the participants.

Daily: The director provided for a system of daily evaluations which were accepted in principle by the institute participants, although it could have been implemented more effectively. In general, each participant had the opportunity to check daily a list of nine items on a four point scale (See Appendix E-2 for instrument). Summaries were made and reported to the group as soon as possible. A more effective collection of the evaluations could have provided a more efficient return of the daily summaries. Nevertheless, the overall evaluation made at the end of the institute was encouraging for the principle of a daily evaluation.

Weekly: At the beginning of the second and third weeks, a summary of the daily evaluations was given to each participant. Of course, the summary for the third week remained to be included in the final report of the Institute (See Table I. Also Appendix E-5).

At End of Institute: An evaluation instrument of considerable scope was designed to secure an end-of-conference evaluation. Consisting of three pages of items, it provided for participant evaluation on each program item as well as ratings for general items of facilities and personal comfort (See Appendix E-6 for instrument). Collection of this instrument was excellent, probably influenced in part by the fact that participants were oriented to it two days before the close of the Institute. However, such an instrument should have been devised earlier and included in the material presented opening day. Several participants supported this idea in their final evaluation comments.

Mini-Reports: The technique used in this conference to encourage analysis and synthesis of the Institute proceedings was called "mini-reports." A daily guide sheet (Appendix E-1) was provided for each of the six small groups and included two questions to be answered: "This We Believe!" and "This We Can Do!" One-half hour was set aside each morning (when appropriate) for each group to present a 3 to 5 minute mini-report of their small group discussion of the events of the previous day. The written report was then submitted to the Institute secretary who provided multiple copies only for the members of the group developing that report. Provision was made for all written reports to be included in the final Institute report.

OUTCOMES

The primary goal of the Institute Planning Committee was to so design and conduct the program that the participants would improve their effectiveness in teaching the disadvantaged. This was fully realized as a lofty goal, not quickly reached and not easily discernable. Thus, it was agreed that although provisions for daily, weekly, and final evaluation of the Institute would provide part of the answers, follow-up in the field and evaluation over a period of time was also essential. It is assumed that such a follow-up and field evaluation can be made during the ensuing year.

Although the daily evaluations included a general measure of teacher interest, content gain, and opinion change, more specific evidence on which one might predict improved teacher effectiveness in teaching the disadvantaged can be gleaned from the daily written reports of small group work. These reports were directed to the statements of (1) "This I Believe" and (2) "This We Can Do". The following paragraphs summarize these declarations. Each statement is identified with the various small groups for the interest of the participants.

THIS WE BELIEVE	THIS WE CAN DO
Group I.	
1. Disadvantaged students need to be identified; their needs also. 2. Need knowledge of projected manpower requirements.	1. Meet teacher needs through this institute, school on social services, home surveys of students, use of student records, help from Employment Security Commission records, community survey, involvement in community activities and clubs. 2. Teachers need fewer and smaller classes to better meet individual needs of students.

3. Need to know community: social stratification, economic and educational levels, practical structure.
4. Need improved ability to motivate students, other teachers, administrators.
5. Need improved communications and understanding of occupational programs among faculty, administration, students, community.
6. Apparent unconcern of some disadvantaged students may be a cover-up caused in part by lack of communication and constant rejection.
7. Fear of school in some cases result of poor education, lack of vocabulary, improper clothing, etc.
8. The disadvantaged are disadvantaged; not stupid.
9. Students feel more secure when objectives of teaching unit are clear.
10. Motivation is more difficult with disadvantaged students.

3. Involve parents more.
4. Encourage more diversified curriculums.
5. Utilize more assembly programs, career days, P.T.A., Publicity, Home Visits, Advisory Council, Live Projects.
6. More patience, flexibility in deciding upon reasons for lack of concern by parents and child.
7. Show concern through actions and expression as well as words.
8. Understand that working parents are harder to involve and sometimes impatient.
9. Define expected outcomes of unit prior to teaching unit; involve students in developing sub-objectives.
10. Variety of approach essential; practical work at student level is important.

Group II.

1. A stigma of inferiority does surround Vo. Ed. and must be removed.
2. The term "disadvantaged" must be clearly defined.
3. Underlying causes of disadvantaged must be identified, corrected, eliminated.
4. A need for funding supplies, materials, facilities does exist.
5. Grading system is problem.
6. Teachers of disadvantaged need help with "behavioral objectives".

1. The attitude of the Vo. teacher and interpretation of his course is critical.
2. Use the state reference on definitions.
3. Encourage pre-vocational courses introducing students to job-type choices.
4. Develop system to reflect progress of disadvantaged student without conflict with total grading system.
5. Learn what funds are available and spend it more wisely.
6. Make special efforts to show your interest to disadvantaged students.

7. Teachers must be prepared to deal with value systems of their students.	7. Let the disadvantaged learn from the advantaged.
8. Emotionally and mentally handicapped must be separated, in classes, from the disadvantaged.	8. Provide learning materials geared to disadvantaged students' needs.
9. Disadvantaged students need behavioral objectives unique to their situations.	9. Use small group instruction; small units of instruction.
10. Some people live in deplorable housing conditions.	10. Grade individually; avoid overemphasis on competition. Pride in individual achievement should be encouraged.
11. Disadvantaged students can learn.	11. Work with community housing groups.
12. Teacher attitude toward students is critical.	12. Accept student level and go from there.
13. Modified teaching methods are important.	13. Temper opinions of other teachers with those of your own opinion.
14. Teachers must work with values as well as "subject matter."	14. Respect the individual & his opinions.
	15. Advance at a slower pace; individualize instruction, adjust teacher terminology to fit student.
	16. Realize a person's circumstances do not necessarily reflect his values.
Group III.	
1. Some students are omitted from "disadvantaged programs".	1. More careful study of interests and abilities of students when identifying the disadvantaged. Some method of follow-up of those who should but do not enroll for special education.
2. Slow learners should be identified earlier - before high school.	2. More teacher-student & counselor-student conferences.
3. Better communication needed with families of the disadvantaged.	3. More team-work between teachers and social workers who make home visits, make P.T.A. worthwhile, have workshop for parents.
4. Academic teachers need more awareness of vocational teachers.	4. Attend institutes of this kind. Have local level institutes. All vocational teachers work as a team with other teachers.

5. All curriculums should be relevant to students needs; sometimes "grouping" is necessary.
6. Guidance Counselors not geared for disadvantaged students.
7. Subjects relating to black students not offered.
8. Middle class students have best opportunities for college loans & scholarships.
9. "Traditional" schools are not geared to disadvantaged students.
10. Despite all efforts, many students will drop out of school at age 16.
11. Too many students are trained for specific vocational jobs when they no longer exist.

5. Encourage more participation of teachers in writing of proposals.
6. Counselors should take more effort to get loans for students.
7. All students need saleable skills by age 16.
8. Students should be assisted to find part-time work while in school.
9. Returning drop-outs need extra counseling.
10. Drop-outs need to be followed-up - counseled toward night school, etc.
11. Periodic survey of local employment needs.

Group IV.

1. Teachers & administrators need more understanding of occupational courses and the world of work.
2. Parental aspirations for their children often unrealistic.
3. Morning co-op work experiences should be tried.
4. "Working" students not always appreciated by teachers.
5. The learning style of the disadvantaged is different - non-verbal.
6. Agression is natural tendency of many of the disadvantaged.
7. Should disadvantaged be in separate classes? (No clear cut answer).
8. Goals and values of disadvantaged may differ from middle class.

1. Inservice training for faculty and administrators.
2. Parents and community more involved in total school program.
3. Teachers work with community leaders.
4. Faculty seminars, etc., to develop understanding of "work" values: physical, emotional, academic.
5. Meaningful activities needed; short units.
6. Understand the background of students; keep control with patience, reason, and acceptable activities.
7. Middle class goals & values cannot be forced—but they do remain as goals. Teachers must care.
8. Flexibility is a key; immediate goals are important to these students.

9. Teacher must be motivated, dedicated, compassionate and have expertise to adapt methods and content to different levels in classes.
10. Grouping must be flexible and purposeful.
11. Find out for what a child is ready; not if he is ready.
12. Tests, course guides, lessons are not rigid.
13. Most administrators can be sold on allowing his staff to experiment with curriculum.
14. Curriculum innovations take more teacher time and funds.

9. Must know our students.
10. More "action" learning is needed. The practical needs to be emphasized. A positive self-image is needed by these students.
11. Adjustment to individual differences is possible.
12. Objectives should be teacher-student planned. A wide range of alternatives projected; some mandatory, some selective.
13. We must justify our proposals.
14. Know funding resources. Use state consultants.

Group V.

1. Disadvantaged students need to be identified.
2. Know school curriculum.
3. Need more vocational counselors.
4. Need to know job opportunities.
5. Need more understanding and coordination between academic and vocational teachers.
6. A continuing program for 7-12.
7. The disadvantaged have a language and vocabulary barrier.
8. More individualized instruction.
9. More motivation is needed to encourage disadvantaged.
10. Determine expected outcomes before starting course.
11. Understanding student is key to counseling as well as effective teaching.
12. More counselors trained in Vo Ed.
13. Curriculum "tracks" in high school should be interconnected.

1. Check previous records, classroom observations, parent-teacher conferences, home visitation.
2. Seek out copies of academic, vocational and special education curriculums.
3. Keep asking for counselors.
4. Make community survey.
5. It's a cooperative planning system.
6. Make authorities aware of needs.
7. Begin in early school years.
8. Allow students to proceed at own rate; use student tutors; use programmed instruction.
9. Teacher relationship more important: warm, friendly. Help build their self-image.
10. List all activities according to priorities involved in reaching an objective.
11. Listen, develop awareness of his sensitivities.
12. Encourage administration to provide cross-overs from various "tracks".

Group VI.

1. Knowledge of the disadvantaged is crucial.
2. Student oriented - all faculty, administrators & facilities.
3. Curriculum geared to needs of disadvantaged - should be occupationally oriented.
4. Need for study of disadvantaged.
5. Coordination is needed among agencies interested in the poverty group.
6. Motivation of disadvantaged is problem.
7. A disadvantaged is one who cannot succeed in a regular program in school without special help.
8. Many organizations attempt same task.
9. Many organizations have opposing views about disadvantaged.

1. Utilize school records. Know student interests and aptitudes. Know homes through visits. Take positive approach - "from where he is, to where he ought to go". Follow-up in school and out-of-school.
2. The teacher is key and leads out.
3. Teachers get together for planning.
4. We can do a community study.
5. We can help locally.
6. Members of this institute can set examples locally.
7. We should stabilize this definition.
8. Coordination locally is our role.
9. We should use our state definition. Educators deserve some credit for past work with the disadvantaged.

EVALUATION OF THE INSTITUTE

Participants Reactions

As previously mentioned (Evaluation Format) participants had the opportunity to record their views on a rather comprehensive evaluation instrument.

An overview of Table I supports the contention that program content and presentation was considered successful by the constituents. For each program item on the final evaluation instrument an average score was computed, and the table shows the score distributions by weeks. On a four-point scale, approximately 98 percent of the three-week composite were 2.5 (good) or higher (Sub-total one and two). Nearly 33 percent of the program items were rated 3.5 (very good) or higher (Sub-total one). Finally, only two program items had an average rating of less than 2.5.

Table II shows an evaluation of some of the more general aspects of the Institute. All items received averaged ratings above the "good" level. For all practical purposes, nine of the ten items rated closer to the "very good" classification than to the lower classification of "good". It seems evident that the Institute participants were very appreciative of the Institute "as a whole" since this particular item was rated 3.77 of a possible 4.0 points.

Table I. Distribution of Averaged Ratings* of Program Items on Final Evaluation Instrument, June 25, 1970

	Items of 1st Week (Percentage)	Items of 2nd Week (Percentage)	Items of 3rd Week (Percentage)	Composite (Percentage)
Very Good				
3.75-4.00	2.8	25.0	11.4	12.2
3.50-3.74	17.2	25.0	20.5	20.6
Sub-Total	20.0	50.0	31.9	32.8
Good				
3.00-3.49	37.1	35.7	52.3	43.0
2.75-2.99	31.5	14.3	13.5	19.6
2.50-2.74	5.7	----	2.3	2.8
Sub-Total	74.3	50.0	68.1	65.4
Fair				
2.24-2.49	5.7	----	----	1.9
2.00-2.23	----	----	----	----
Poor				
1.50-1.99	----	----	----	----
TOTALS	100	100	100	100

*Based on Returns from 82 Participants.

Table II. Evaluation of General Items of Institute for Teachers of the Disadvantaged, 85 Participants, N. C. State University, 1970

ITEMS	AVE. RATING
Chairmanship	3.86
Evaluation	3.85
Notebooks	3.84
Institute as a Whole	3.77
Objectives	3.74
Meeting Individual Needs	3.71
Coordination of Activities	3.69
Time Schedule	3.66
Design	3.48
Main Meeting Room	3.20
Library Facilities 3.18	3.19
Small Group Rooms	3.16

Rating Scale: Very Good 4.0 points
Good 3.0
Fair 2.0
Poor 1.0

Suggestions from Participants

On the final evaluation instrument, space was provided for suggestions for improving future institutes for teachers of the disadvantaged. From a summary of this advice, the Director selected the following points as guides for future programs.

1. Spend less time on background (objective 1) and spend much more time on what to do in the classroom.

2. More emphasis on group demonstrations. More planning for the small group discussions.

3. Hold for administrators. Hold institute for all teachers in county units. (3)

4. I think that some time should be provided so that participants who work in the same or similar fields can meet in small groups and exchange teaching techniques and ideas which have been successful. I also think that more administrators should attend so that they might exchange ideas with teachers and counselors so that we can work better together during the school year. (3)

5. Evaluation sheets should be put in notebooks and handed in each morning, dated. (5)

6. Keep resource people from fields other than education - very good.

7. Encourage from the state level that such workshops be held for all teachers in the unit.

8. Publicize the institute so that the maximum number of people will benefit. (4)

9. I feel that the institute in itself was very good, but should be attempted again next year with some changes. Teachers themselves can do little toward major change without the backing of their principal. Therefore, I suggest, the institute next year be directed toward the principals and superintendents. (2)

10. One group who has already made a great deal of progress in working with the disadvantaged - Home Economics teachers - did not have someone on the program. I believe this group could have added something of real value.

11. When I, as an institute member, was involved in an active manner, I learned more. I wish there had been more on the "how" or "methods" to use to reach the disadvantaged in the classroom. (3)

12. The institute has been invaluable in making the participants think. If we were given more information on how to carry out some of the suggestions that were offered, the institute would have been more beneficial to us. We would find it easier to apply to our individual needs.

13. The small groups needed a better understanding of what they are expected to accomplish. Also some groups did not have the opportunity to profit from the experiences of the consultants.

14. Participants in the institute should be selected on the basis of how hard they are willing to work at the task.

15. Add more participant demonstrations.

16. Add more curriculum planning.

17. Add more field trips.

18. Have another institute next year. (7)

19. Each participant should be paid $15 a day in full and let him take care of his expenses.

20. I would like to see more academic teachers involved in this institute or the same institute specifically for academic teachers.

21. More group activity such as demonstration sessions of June 24. (3)

22. Plan a consultant for each small group or combine the groups so that each had a consultant.

Free Comments

Participants had the opportunity to write free comments on the end-of-conference evaluation instruments. One negative comment was received in the total of 27 notations. The following were selected as most appropriate for inclusion in this report.

1. I feel the conference was generally a success in that for the most part it helped develop a better understanding of the differences in participants and allayed fears and misunderstandings.

2. I enjoyed the session; I got a lot of information that was helpful.

3. I only hope that I can apply just some of the things that I have learned here. The opinions and ideas that were either confirmed or strengthened; it has really been helpful to all I would say.

4. Thanks for a chance to be a part of such a program. (4)

5. This institute was well planned for the time allotted. I only wish more teachers could have attended. I hope that there will be more of this nature for the entire school personnel in the State.

6. The institute was much more valuable to me than a "renewal course" for certification - because we came for what we wanted, not knowing whether or not credit would be given. The format was good, the content excellent - thought provoking and conscience striking. Dr. Miller has been most gracious, concerned and genuine. His patience with 80 adults has been tremendous, and we appreciate his attitude very much. Mr. Warwick has done a good job in organizing for the program.

7. These numerical evaluations are based on content and presentation only. My interest and what I learned were not taken into consideration. For the person who is not a recently certified teacher, it was probably most valuable. However, having just completed college, I was perhaps too much "in the know" to gain maximum benefit. At times I was very bored, discouraged with the pace of things, and frustrated by the lack of insight shown in the small group sessions. The most informative sessions were those concerning related services.

8. The conference showed excellent planning and timing. I could not have done half as well. Closer reins should be kept on some participants to assure prompt attendance or just to assure attendance. I would not show movies of the kind shown to my teachers. I feel their intelligence would be insulted to say the least.

9. The institute as a whole was interesting and somewhat enlightening and informative on the part of the field trips given.

10. This has been the most beneficial course of study that I have attended. Do not let it end here. Start planning now for next year!

11. I felt we had a very good director who kept things (events) moving. I would like to see teachers of special areas used more in coming institutes.

12. Overall it has been a good program, and I have been informed a lot especially by after hour talks with other teachers about their classes and techniques.

13. I have been given a fresh outlook on the world many of my students live in - I only hope that my ideas will not die, but that I will give them a chance to survive - and more than this - grow. I would like to thank all of those responsible for this workshop.

14. I have gained much useful information here that I expect to exercise upon returning to the classroom. I am very grateful to have had the opportunity to attend the institute and would be very fortunate to be a part of another such conference. I believe it is the beginning of something great in education.

15. A very helpful institute.

16. An excellent effort on the part of N. C. State University and the State Department of Public Instruction. I strongly recommend that the Planning Committee will plan for future institutes that will take us further in planning to meet the needs of our boys and girls.

17. Thoroughly enjoyable; I hope that we might be offered another institute of this type next year.

18. Overall, I feel that the institute has been excellent and provided many needed answers to questions which have puzzled all of us. I feel that I can much better work with the disadvantaged student now after being involved in this institute. This would be very helpful as over 50% of my students have been identified as disadvantaged.

19. Good!!! (2)

20. Excellent institute - so glad I came. Most of the time was well spent. Very well planned and executed.

21. I think on the whole the institute was a success. More classroom teachers should become participants in institutes of this type. This type of program would benefit all teachers and administrators in our public schools. (3)

22. Someone should have explained the rules of common courtesy to the group - promptness, not talking when a speaker is talking, etc.

Voluntary Reports

Some educators place considerable value on voluntary efforts shown by students in a learning situation. In this institute, no special reports were requested for the field study trips or the "maxi-evaluations" conducted by the participants. Nevertheless, two of the six groups submitted written summaries of the viewpoints they expressed orally on the final morning of the institute (See Sample, Appendix E-7).

In addition, three groups submitted written reports of their field studies relating to local social services (See Appendix E-8 for one sample report).

Finally, two groups submitted voluntary reports of their field studies related to Vocational Rehabilitation Services (See Appendix E-9).

APPENDIX A
Institute Program

INSTITUTE FOR TEACHERS OF THE DISADVANTAGED
MONDAY JUNE 8, 1970
T. R. MILLER, CHAIRMAN

8:30	Registration - Coffee Hour	Harrelson 207
9:30	Welcome - Dean Carl J. Dolce, School of Education, NCSU	"
9:40	Greetings - Dr. Charles Law Director, Occupational Education N C Dep't Public Instruction	"
9:50	Overview of Conference - T. R. Miller	"
10:00	Keynote: "Preparing the Disadvantaged for for the World of Work" Dr. Joseph Nerden, professor, School of Education, NCSU	"
10:40	Break	
11:00	Reactor Panel - Representatives from Occ. Ed., Gen. Ed., Guidance, Voc. Rehab., and Social Services	"
	Forum - Led by Panel Chairman	
12:15	Lunch	
1:30	Focusing the Institute - T. R. Miller	"
2:00	Small Groups Teacher needs (What) Teacher problems (How)	Rooms 221 227 230 242 244 261
4:00	Adjourn	

GUIDE SHEET FOR SMALL GROUPS
MONDAY AFTERNOON
JUNE 8, 1970

Group No. _____

Name of Chairman _____

Name of Secretary _____

Topic I Teacher Needs
(Knowledge, understanding, skills, appreciations)
(The "what")

Topic II How might teachers meet these needs?
(How, when, where, who)

TUESDAY, JUNE 9, 1.7
Chairman - T. R. Miller

8:30	Mini-Reports -	Group Leaders	Harrelson 207
9:00	The N. C. Program To Serve Special Needs Students	Mr. Warwick	"
9:30	Forum	Mr. Warwick	"
10:00	Break		
10:30	Human Relations Team	Mr. Nile Hunt	"
12:00	Lunch		
1:15	Small Group Work	Mr. Hunt, and Co-workers	Rooms 221, 227, 238, 242 244, 261
2:30	Break		
3:00	Panel Forum	Mr. Hunt, and Co-workers	Harrelson 207
4:00	Adjourn		

* Meeting of Group Leaders - Harrelson 261 - Mr. Walter Cox

WEDNESDAY, JUNE 10, 1970
T. R. Miller, Chairman

8:30	Mini-Reports	Group Leaders	Harrelson 207
9:00	Manpower Development Corp.	Mr. George B. Autry	"
10:15	Break		
10:30	Movie "In the Company of Men"	Mr. Preston Kennedy	"
12:30	Lunch		
1:45	Small Groups - The Behavior of the Disadvantaged (3)		Rooms 221,227,238
	Counseling the Disadvantaged		" 242
	The Out-Reach Program		" 261
2:30	Break		
3:00	Small Groups (Continued)		
4:00	Adjourn		

THURSDAY, JUNE 11, 1970
T. R. Miller, Chairman

8:30	Mini-Reports	Group Leaders	Harrelson 207
9:00	Using Behavioral Objectives	Dr. C.C. Scarborough	"
9:45	Forum	"	"
10:00	Break		
10:30	Using Directed Work Experiences	"	"
11:15	Orientation to first Field Study	Mr. Ralph Campbell	"
12:00	Lunch		
1:15	Small Group Work		
	Groups I, II, III	Dr. Scarborough	Rooms 221,227,23
	Groups IV, V, VI	Group Leaders	" 242,244,26
	This We Believe		
	This We Can Do		
2:30	Break		
3:00	Small Group Work or Library Study	Group Leaders	
4:00	Adjourn		

FRIDAY, JUNE 12, 1970

8:30	Orientation	Mr. Ralph Campbell and Co-workers	Harrelson 207

All day Field Study to
Disadvantaged areas of Wake County
Arranged by Wake Opportunities
Mr. Nurham Warwick - Coordinator
Mr. Ralph Campbell - Director

MONDAY, JUNE 15, 1970
T. R. Miller, Chairman

9:00	Mini-Reports of Field Study	Group Leaders	Harrelson 207
9:30	What's "Special" for the Disadvantaged from Guidance and Counseling?	Mrs. Thelma Lennon	"
10:15	Break		
10:30	Vo. Development - What's Critical for Teachers of the Disadvantaged? (An interview by T. R. Miller)	Dr. Roy Anderson	"
11:30	Symposium - Forum	T. R. Miller	"
12:00	Lunch		
1:15	Small Groups I, II, III (Dr. Anderson circulates)	Group Leaders	Rooms 221,227, 238
	Small Groups IV, V, VI (Dr. Scarborough circulates)	Group Leaders	Rooms 242,244 261
2:30	Break		
3:00	Mini-Reports		
3:30	Orientation for Tuesday Field Studies	Mr. Warwick	Harrelson 207
4:00	Adjourn		

TUESDAY, JUNE 16, 1970

Special Field Studies

Coordinator-Mr. Warwick

WEDNESDAY, JUNE 17, 1970
T. R. Miller, Chairman

8:30	Mini-Reports of Field Study	Group Leaders	Harrelson 207
9:00	A New Approach to Curriculum Planning	Mr. John Wooten Lenoir Co. Schools	"
10:30	Break		
11:00	Curriculum - Continued	John Wooten	"
12:00	Lunch		
1:15	Small Group Work Groups I, II, III Dr. Scarborough circulates	Group Leaders	Rooms 221,227,23
	Groups IV, V, VI Dr. Roy Anderson circulates	Group Leaders	Rooms 242,244,26
2:30	Break		
3:00	Small Group Work or Library		
4:00	Adjourn		

*Note Early Schedule for Tomorrow, Thursday, June 18

THURSDAY, JUNE 18, 1970
T. R. Miller, Chairman

*8:00	Mini-Reports	Group Leaders	Harrelson 207
8:30	Organizing the Classroom	Walter Cox	"
9:00	Using Audio - Visual Resources	Ken Herman	"
9:30	Break		
10:00	Using Audio - Visual Resources	"	"
11:00	An Overview of Social Services Provided for North Carolinians	Col. Clifton Craig, Commissioner, State Dep't of Social Services	
12:15	Lunch		
1:15	Small Group Work Groups I, II, III Ken Herman, Consultant	Group Leaders	Rooms 221, 227,2
	Groups IV, V, VI Walter Cox, Consultant	Group Leaders	Rooms 242,244,26
4:00	Adjourn		

FRIDAY, JUNE 19, 1970

Field Study with Social Field Workers

Nurham Warwick-Coordinator

MONDAY, JUNE 22, 1970
T. R. Miller, Chairman

8:30	Mini-Reports of Field Studies done with Local Dep't of Social Services	Group Leaders	Harrelson 207
9:00	Programed Instruction: Theory & Practice	Robert Troxler	"
10:00	Break		
10:30	Forum on Program Instruction	Robert Troxler	"
11:15	Conference Evaluation Plans	T. R. Miller	"
11:45	Lunch		
1:00	Small Group Work Groups I, II, III Walter Cox, Consultant	Group Leaders	Rooms 242,244,26
	Groups IV, V, VI Ken Herman, Consultant	Group Leaders	Rooms 221,227,23
4:00	Adjourn		

TUESDAY, JUNE 23, 1970
T. R. Miller, Chairman

8:30	Utilizing Community Resources	Dr. Selz Mayo	Harrelson 207
9:30	Forum	"	"
10:00	Break		
10:30	Helping the Deprived with Arithmetic and Reading	Mr. David Singleton Mrs. Peacock Mrs. Waddell	"
11:30	Forum		
12:00	Lunch		
1:15	Groups I, II, III with Dr. Mayo Groups IV, V, VI with Mr. Troxler		Rooms 221,227,238 Rooms 242,244,261
4:00	Adjourn		

WEDNESDAY , JUNE 24, 1970
T. R. Miller, Chairman

8:30	Demonstration Sessions Groups I, II, III	Group Leaders	Harrelson 207
10:00	Break		
10:30	Demonstration Sessions Groups IV, V, VI	Group Leaders	"
12:00	Lunch		
1:15	Small Group Work Groups I, II, III Robert Troxler, Consultant	Group Leaders	Rooms 221, 227 238
	Groups IV, V, VI Dr. Selz Mayo, Consultant	Group Leaders	Rooms 242, 244, 238
2:30	Break		
3:00	Small Groups Continue or Library Study	"	
4:00	Adjourn		

THURSDAY, JUNE 25, 1970
T. R. Miller, Chairman

8:30	Maxi-Reports Symposium with 2 representatives from Groups I, II, III	Harrelson 207
10:00	Break	
10:30	Symposium from Groups IV, V, VI	"
12:00	Luncheon Program "Mystery" Speaker Remarks - Dean Dolce Awarding of Certificates - Mr. Warwick Reimbursement Business - Mr. Warwick	N. C. State Faculty Club
3:00	Adjourn	

APPENDIX B

INSTITUTE STAFF

N C State Dep't Public Instruction

Mr. Nurham O. Warwick
Chief Consultant of Disadvantaged and Handicapped
N C State Dep't of Public Instruction
Raleigh, N.C.

Mrs. Marie Moffitt
Consultant, Program Services
N C State Dep't of Public Instruction
Raleigh, N.C.

Mrs. Barbara Holland
Secretary, Mr. Nurham Warwick
N C State Dep't of Public Instruction
Raleigh, N.C.

Mrs. Trudy Wiggins
Secretary, Mr. Nurham Warwick
N C State Dep't of Public Instruction
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APPENDIX C

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STATE-WIDE INSTITUTE FOR TEACHERS
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APPENDIX E

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GUIDE SHEET FOR SMALL GROUPS

Group No._____ Name of Chairman_____

Name of Secretary_____ Date_____

The purpose of this Guide Sheet is to serve as a memo of what the participants of the small groups feel are accomplishments of their individual meetings and field studies. These will serve as "content" for the Institute Evaluation Report. Please make the content refer to at least these two headings: This We Believe, and This We Can Do

Thanks very much.

T. R. Miller, Director

THIS WE BELIEVE!

THIS WE CAN DO!

END OF MEETING EVALUATION FORM

1. Were you interested in yesterday's presentation?	Very much _____	Quite a bit _____	Some but not much _____	Very little _____
2. Do you feel that the group was interested in them?	Very much _____	Quite a bit _____	Some but not much _____	Very little _____
3. Did you learn any new facts or get any new ideas?	Very much _____	Quite A Bit _____	Some but not much _____	Very little _____
4. Did you change any of your previous opinions as a result?	Very much _____	Quite a bit _____	Some but not much _____	Very little _____
5. Were your previous opinions confirmed or strengthened?	Very much _____	Quite a bit _____	Some but not much _____	Very little _____
6. Did your "small group" work accomplish anything?	Very much _____	Quite a bit _____	Some but not much _____	Very little _____
7. Was there enough preparation for the day's program?	More than needed _____	All that was needed ____	Should have been more _____	Should have been much more _____
8. Was there enough opportunity for discussion?	Too much _____	All that was needed ____	Should have been more _____	Should have been much more _____

9. Do you have any suggestions (about techniques, materials, etc.) for future meetings. (Use other side of page if necessary.)

Summary of Evaluation Sheets for Week of June 8 - 12

Question	Items Checked	Monday	Tuesday	Wednesday	Thursday	Friday
1. Were you interested in yesterday's presentation?	Very much	49	39	39	38	42
	Quite a bit	12	13	14	15	14
	Some	0	7	3	6	3
	Very little	0	1	4	2	2
2. Do you feel that the group was interested in it?	Very much	49	29	32	20	29
	Quite a bit	17	21	19	25	23
	Some	0	7	2	15	4
	Very little	0	1	6	1	2
3. Did you learn any new facts or get any new ideas?	Very much	40	34	32	26	23
	Quite a bit	17	18	17	24	21
	Some	2	3	5	5	11
	Very little	0	4	4	4	4
4. Did you change any of your previous opinions as a result?	Certainly did	16	13	20	14	11
	Probably did	27	27	13	25	25
	Maybe	13	6	11	6	11
	Not at all	6	8	14	16	12
5. Were your previous opinions confirmed or strengthened?	Very much	30	22	25	28	24
	Quite a bit	28	24	18	20	20
	Some	4	8	10	8	13
	Very little	0	2	3	5	0
6. Did your small group work accomplish anything?	Very much	21	16	20	21	12
	Quite a bit	27	24	23	26	15
	Some	9	6	5	7	5
	Very little	2	6	6	3	0
7. Was there enough preparation for the day's program?	More than needed	7	10	8	7	5
	Sufficient	43	37	39	39	46
	Insufficient	10	8	3	8	8
	Very insufficient	0	2	5	2	1
8. Was there enough opportunity for discus-	Too much	2	2	5	3	1
	Sufficient	48	39	28	49	43
	Insufficient	10	12	19	5	12

Question	Items Checked	Monday	Tuesday	Wednesday	Thursday	Friday
1. Were you interested in yesterday's presentation?	Very much	46	54	29	35	38
	Quite a bit	15	8	21	7	5
	Some	0	0	6	1	1
	Very little	0	0	1	0	0
2. Do you feel that the group was interested in it?	Very much	43	53	23	27	37
	Quite a bit	18	8	25	13	8
	Some	0	0	9	1	0
	Very little	0	0	1	0	0
3. Did you learn any new facts or get any new ideas?	Very much	42	54	36	34	39
	Quite a bit	17	6	14	7	3
	Some	1	1	6	1	2
	Very little	1	0	0	0	0
4. Did you change any of your previous opinions as a result?	Certainly did	16	37	14	12	27
	Probably did	34	15	26	22	15
	Maybe	8	2	11	4	1
	Not at all	2	6	6	1	1
5. Were your previous opinions confirmed or strengthened?	Very much	27	28	9	19	21
	Quite a bit	29	27	28	19	20
	Some	4	3	14	3	2
	Very little	1	2	3	1	0
6. Did your small group work accomplish anything?	Very much	16	18	15	16	15
	quite a bit	28	13	27	19	9
	Some	11	0	12	3	1
	Very little	3	0	2	0	0
7. Was there enough preparation for the day's program?	More than needed	8	8	3	8	7
	Sufficient	49	48	48	33	36
	Insufficient	3	4	5	1	1
	Very insufficient	0	0	0	0	0
8. Was there enough opportunity for discussion?	Too much	3	3	1	1	0
	Sufficient	45	48	43	32	44
	Insufficient	15	6	12	8	0
	Very insufficient	0	0	0	0	0

Summary of Evaluation Sheets for Week of June 22 - 24

Question	Items Checked	Monday	Tuesday	Wednesday
1. Were you interested in yesterday's presentation?	Very much	25	22	31
	Quite a bit	17	21	5
	Some	8	3	2
	Very Little	0	2	0
2. Do you feel that the group was interested in it?	Very much	19	19	26
	Quite a bit	23	23	10
	Some	8	3	2
	Very Little	0	3	0
3. Did you learn any new facts or get any new ideas?	Very much	22	21	19
	Quite a bit	18	20	13
	Some	7	5	4
	Very Little	1	1	1
4. Did you change any of your previous opinions as a result?	Certainly did	13	9	8
	Probably did	18	23	17
	Maybe	13	11	6
	Not at all	5	5	6
5. Were your previous opinions confirmed or strengthened?	Very much	7	9	12
	Quite a bit	23	26	19
	Some	14	11	5
	Very Little	3	3	2
6. Did your small group work accomplish anything?	Very much	18	17	12
	Quite a bit	22	20	15
	Some	7	8	8
	Very Little	4	3	0
7. Was there enough preparation for the day's program?	More than needed	7	2	4
	Sufficient	39	40	29
	Insufficient	3	7	5
	Very Insufficient	0	0	0
8. Was there enough opportunity for discussion?	Too much	0	1	2
	Sufficient	45	43	31
	Insufficient	5	4	7
	Very insufficient	0	0	0

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Evaluation of 1970 Institute
For Teachers of the Disadvantaged
June 25, 1970

Using the following rating scale, rate each of the following items on both Content and Presentation:

Very Good ----------Score of 4
Good ----------Score of 3
Fair ----------Score of 2
Poor ----------Score of 1
Does not apply-----Score of 0

	Item to Evaluate	Content	Presentation
June 8	1. Orientation to Conference		
	a. Welcome - Dean Dolce		
	b. Greetings - Clifton Belcher		
	c. Overview of Conference - T. R. Miller		
	2. Keynote address - J. Nerden		
	3. Reactor Panel to Keynote address		
	4. Small groups (Teacher needs and problems, 1st day)		
June 9	5. The N. C. Program to Serve Special Needs Students- Warwick		
	6. Lecture on Human Relations - Nile Hunt		
	7. Panel Forum - Mr. Hunt and Co-workers		
June 10	8. Manpower Dev. Corp. Lecture - Mr. Godwin		
	9. Movie: "In the Company of Men"		
	10. Manpower small groups		
	a. The behavior of the disadvantaged		
	b. Counseling the disadvantaged		
	c. The Outreach Program		
June 11	11. Using Behavioral Objectives - C. C. Scarborough		
	12. Small group work with C. C. Scarborough		
	13. Orientation to First Field Study - Mr. Campbell		
June 12	14. First Field Study		
June 15	15. What's Special for the Disadvantaged Mrs. Lennon		
	16. Lecture and Interview - R. N. Anderson		
	17. Small group work with Mr. Anderson		
June 16	18. Special Field Studies		
	Murdock Center		
	Stonewall Jackson		
	Raleigh - Durham trip		
	(rate only the one you attended)		

	Item to Evaluate	Content	Presentation
June 17	19. Curriculum Planning - John Wooten and Co-workers		
	20. Miss Williams - Video tapes		
June 18	21. Organizing the Classroom - Walter Cox		
	22. Lecture Demonstration on Visual Resources -Ken Herman		
	23. Laboratory work - Ken Herman		
	24. Laboratory work with Mr. Cox and Mr. Sutton		
	25. An Overview of Social Services Dep't Jim Burns		
June 19	26. Field Study in Home County with Social Workers		
June 22	27. Programed Instruction - Robert Troxler		
	Programmed Instruction small groups Mr. Troxler		
June 23	28. Utilizing Community Resources Selz Mayo		
	29. Small group work with Mr. Mayo		
	30. Helping the Deprived with Fundamentals		
	Mr. Singleton		
	Mrs. Peacock (Reading)		
	Mrs. Waddell (Arithmetic)		
June 24	31. Demonstration Sessions by Groups		
	Group I		
	Group II		
	Group III		
	Group IV		
	Group V		
	Group VI		
June 25	32. Maxi - Reports by Groups		
	Group I		
	Group II		
	Group III		
	Group IV		
	Group V		
	Group VI		
	33. Luncheon Program		
	In general this event		
	Mystery Speaker		
	Certificates		
	34. The Institute as a Whole		
	How appropriate were the objectives?		
	How effective was the design of the program?		
	How satisfactory were the dormitories?		

Evaluation of 1970 Institute

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Item to Evaluate	Content	Presentation
How satisfactory was Avd. 207?		
How satisfactory were the small group rooms?		
How well did the parking accomodations work out?		
How satisfactory were the food facilities?		
How did you like the Notebooks?		
How did you like the time schedule (breaks, lunch, trips, etc)		
How valuable were the 3rd floor library materials?		
How well did the director of the Institute perform in:		
Serving as chairman of sessions?		
Meeting individual needs of participants?		
Coordinating the activities?		
Providing for evaluation of conference?		

35. In general, what needs to be changed if another institute were to be set up for next year? _____

FREE COMMENTS

Maxi - Evaluation Group IV
Preparing the Disadvantaged for the World of Work
June 8 - 25, 1970

We have come to understand:

That being disadvantaged may take any one of several forms, but more often involves poverty, cultural and educational deprivation, or discrimination due to socio-economic standing, race or cultural difference.

That the disadvantaged may see much of our educational process as not useful or suitable for them and feel that the teachers and administrators would rather not have them in school.

That the disadvantaged may overreact emotionally and behaviorally to a system they think neglects them or deprives them.

That a first step in dealing with those outside the mainstream of our social and economic life is dealing with our attitudes and feelings toward these people.

That we may overreact to the feelings and attitudes of the disadvantaged if these seem to be attacks upon our behavior or our motives.

That education is, as it has always been, an individual and personal thing which can be successful only if the differences in aptitudes, interests, values, and cultural patterns are understood, accepted and considered by the educator.

That our present "requirements" for graduation from high school probably are too rigid, not suitable for all students, and cause dropouts.

That curriculum guides, syllabi, and textbooks are not necessarily to be followed rigidly by the teacher but may be used as resources in adapting instruction to the students we have.

That objectives stated in behavioral terms and formulated by both teacher and students working together may lead to better understanding, communication, and evaluation, and result in more effective motivation and learning.

That the learning - style of the disadvantaged is different - not as efficient and mostly a non-verbal type; that learning activities must be practical and concrete, involving action or doing, and with an immediate goal.

That the disadvantaged, although they have a different life-style and different values, do want to have access to the economic and social main-stream, and should learn some of the values and behaviors which will help them in reaching this goal.

That teachers of all subjects need some familiarity with the entire world of work in which their students will be participants.

Implications - Things that can be done.

Teachers and counselors can get to know about their students and the way they live by learning about all the neighborhoods of their geographical area, by visiting homes, by participating in community activities, and by conferences with the Social Service workers.

Teachers can show appreciation and acceptance of the individual student and encourage a positive self-image and self-confidence in each one by not criticizing in the presence of others and by using commendation and giving opportunity for favorable recognition.

Teachers can adapt curriculum content and requirements to individual interests, abilities and aptitudes, using those things which are relevant and meaningful to individual students and allowing and encouraging student initiative in planning goals and activities.

Teachers can respect and accept all types and levels of learning and achievement as being worthwhile to the learners and to society.

Teachers and counselors can be impartial in their relationships with all students, accepting and attempting to help all, without special favor to any. Counselors can remain separated from the authoritarian, judgmental aspects of the school organization.

Teachers can show they care, can sometimes serve as parent substitutes, and can provide role-models for children to inspire and motivate them. Teachers can by their courtesy and consideration inspire such behavior in students.

Teachers can emphasize short-range objectives and goals and reward their achievement. They can allow students to begin where they are in subject-matter and to achieve at their own rates. They can use small groups within their classes to differentiate instruction. They may allow more capable students to help in individual instruction.

Teachers can use a variety of methods and materials and activities to interest and motivate and to promote individual learning. Visual and audial materials may be prepared or obtained and used as needed.

Teachers can prepare, or obtain, programmed materials to be used in individualizing instruction and increasing pupil achievement in short-range goals and needs.

Teachers can set up goals and behavioral objectives and allow students to participate by selecting and suggesting objectives and participating in a wide range of activities in achieving these objectives.

Teachers can help the more non-verbal students learn by providing practical, concrete activities for them to undertake.

Teachers can recognize and emphasize the honor and dignity of all types of work and encourage students to learn the types of skills for which they have ability and aptitude.

Teachers can teach students to respect others and learn to get along with others in the World of Work by providing experience in cooperative effort in school.

Teachers can help make students aware of the benefits they will receive in the World of Work by learning to work with others and meeting the requirements of employers.

Teachers can help make other teachers and administrators aware of the things that can be done to help improve the education of the disadvantaged and prepare them for the World of Work.

<u>As a group we have these suggestions</u>:

The daily evaluation sheets could be placed in the notebook or given out at the beginning of each week, with one to be turned in each morning for the previous day.

Members could get to know each other better if name tags with the area of work and address were worn for about two weeks, and each person provided with a list of institute participants, their work, school, and address.

Consultants and speakers should have had more definite information as to who we were, where we came from and what has gone on earlier in the institute.

More Black people could be used as either speaker-consultants or in demonstrating what they have done in the class-room.

Our group agrees that the field trips were special high points in the Institute, particularily the experience with the Social Service Departments in our own counties.

We appreciate the leadership and hard work of Dr. T. R. Miller in planning and supervising these experiences for us. We feel that he has done an outstanding job.

Our group was fortunate to have able, devoted, and down-to-earth leadership in Jack Page as chairman and Judy Gaston as secretary and recorder. Leadership was shared by different members as the situation demanded and our group developed a strong "we" feeling. Our members feel that there should have been more opportunity to have close contact with and better know other members of the Institute in small group settings.

Claranell Brown, Durham

 Bob DeVault, Winston-Salem

Group II

Home Field Studies Report

On Friday, June 19th, the members of Group 2 worked in their home counties with their Social Service Departments. In each county the Social Service staff was well prepared for the day's work. As an introduction to the field work an overview of the social services rendered by the federal, state and county governments was given. Emphasis was placed on the needs of and services for the particular county involved. In addition to this overview, the influence of public opinion and politics on social service was discussed.

A large part of the day was spent in field work. The members of the institute were assigned to case workers and were taken to meet people who are being helped by the Social Service Department. The conditions which make social service necessary and the ways in which social service meets these needs were seen and explained.

In general summarization, the members of Group 2 found the home field studies to be interesting, enlightening and beneficial. Some specific examples of the work done in each county are given below.

Bertie County

The Social Service Department of Bertie County feels that teachers can play an important part in making social service work successful. Teachers can help by explaining and interpreting the program to students and their parents.

Some of the social services provided for the people of Bertie County are:

1. Protective services
2. Birth control
3. Foster homes
4. Food stamps
5. Aid for the blind
6. Aid for the aged
7. Aid for dependent children

Columbus County

The workers in Columbus County visited the home of a family that is not receiving money from the local agency but is participating in the food stamp program. The family consists of a father of questionable character, a mother of questionable mental competence, and three children. A fourth child died of malnutrition a few years ago. The house was filthy and lacked all basic facilities for sanitation, comfort and convenience. Despite these circumstances the children seemed alert, curious and eager to please. These children have potential but no support from home. What kind of influence will educators have on these children?

Greene County

The Greene County workers visited homes, boarding houses, and rest homes. They saw situations ranging from relatively good to extremely bad. After the field work, the workers returned to the Social Service office to report, discuss and ask questions about the day's work.

Tuesday, June 16, 1970

Group I

Groups I and II visited the Stonewall Jackson School - this school is termed the Correction and Rehabilitation Center - 986 acres - Mr. Sloop, Director.

This school runs on a 12 month basis with a 2 week vacation. School closed June 16, 1970 and will reopen July 6, 1970.

There are seven vocational courses offered including driver's education. This course was offered in this school first of any of the other training schools in the State.

Mr. Robert Langley from the State Dep't gave a brief introduction of the school - also showed a film on what is being done in this school and other schools of this kind in the State. The film was narrated by Mr. J. W. McGinnis, Director of Moral and Religious Training. He regards the school as a special school geared toward service and specific training. No matter what, the policy here is that they never give up on a student. There are no criminals by law at this school. They are sent to the home and their community as early as possible. This is the first school in the state to receive accreditation. Some of the real needs of this school stated Mr. McGinnis are 1) a research center, 2) a resource guidance program in connection with the public schools.

The major areas of service of the school are:

1) Behavior modification
2) Education
3) Domiciliary care

Students are sent here 2.4 years behind the grade level of the average pupil because of behavior problems, such as, not getting along at home, missing so much school, etc. They are here not for punishment, but for training. The state administers to 2200 students in this category.

This was the first school for deliquent youth established in 1909. The students range in age from 12 - 16 (grades 6 - 11). Some of the students finish high school here. The School term consists of 240 days a year instead of the 180 day term.

Mr. Lewis, Asst. Director of Stonewall Jackson School also gave a brief talk on some of the new things now at the school such as:

1) Total integration
2) New Carpenter shop and Carpentry course

Mr. Lewis also showed a film about the school. Stonewall Jackson is the oldest training school. All of the child's needs are provided by the school. The first two weeks the boy goes through an orientation program:

1) He is given the proper housing
2) He goes to classes in different subject areas.
3) He is given various IQ tests

After the two weeks he is placed in a grade according to test scores, age, rehabilitation, etc. Besides the academic instruction, there is a full time guidance system here who works with the counselors and academic teachers.

Besides the academic instruction, there is full time music instruction here. There is a full time guidance system here who works with the counselors and academic teachers. The students are involved in vocational training 3 or 4 hours a day along with the academic training. Some of the vocational courses are:

1. Carpentry
2. Shoe repair
3. Baking
4. Laundry
5. Meat processing
6. Textile
7. Plumbing
8. Painting
9. Mechanics
10. Food preparation

There were 10 boys to graduate in the mechanics courses. In addition there are some courses in farming, dairy, etc. These courses are taught and learned through modern, well equipped farms and dairies, etc.

There is a full time physical education course. The extra - curricular activities are:

1. baseball
2. basketball
3. football
4. soccer
5. swimming

They are involved in 4-H activities, camping, basketball and football games off campus, and holidays offer all kinds of events. When on the camping trips, they participate in all kinds of events and bring back ma many trophies. They also have a very good religious program; the boys serve as vespers. One main thought in every boy is when he can return home to his family and friends.

Answers to questions:

1. Boys return home after he has been completely rehabilitated. There is no definite time of stay. A boy stays usually about 1 year, a girl about 13 months.

2. There is no complete follow up as to what happens to the students after leaving Stonewall Jackson. The follow up that they do have is the one year probation that the child is placed on after leaving the school, this is done through the probation office. After this there is no contact.

3. These students so often do not go back to public school when they leave Stonewall Jackson because of not being received well in the school, or they are put too low in the grades. (Teachers could help these students a lot by taking these students under their wings when they return to school and giving them the attention they need.

4. The students cannot stay at this school any longer than their 18th year unless special permission is granted where needed.

5. Each student is treated according to his behavior problem. A child is complete a ward of the state while they are at this school. Suggestions are welcomed, requests are sometimes granted but no dictating from the parents is taken.

We were divided into 3 groups and through 3 very efficient guides were given a thorough tour of the campus and buildings and equipment. This was a follow up of what we had seen on the film.

APPENDIX F - COMMUNICATIONS

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M E M O R A N D U M

To: Participants in the 1970 Institute for Teachers of the Disadvantaged

From: T. R. Miller, Director of the Institute

Welcome Aboard! The theme of this three week institute is "Preparing the Disadvantaged for the World of Work." We have been given tremendous cooperation by a host of people to provide a program which we believe will be both profitable and enjoyable to you.

The official program will be ready for you on June 8th. The first session begins with Registration and Coffee hour, 8:30-9:30, Monday morning in Room 207, Harrelson Hall (the "Round Building" at NCSU).

The program includes a variety of presentations in the morning sessions and small group work in the afternoons. Three all-day field trips are included.

A temporary parking permit is enclosed. Leave this on the dashboard of your car and the College Security Force will honor it. A special parking permit for the remainder of the three weeks is available at Registration.

Dormitory rooms, with bed linens, are available at the time of Registration ($11.00 per week).

Best Wishes.

TRM:pbl

M E M O R A N D U M

To: Small Group Leaders of the Institute for Teachers of the Disadvantaged

From: T. R. Miller, Director of the Institute

Nearly forty percent of the time of this institute has been allotted to opportunities for participants to work in small groups (of less than 15 people). Such arrangements should make possible more interaction and more attention to personal needs as teachers strive to make improved teaching plans for the coming year.

To facilitate the work of these small groups we will need someone to serve as Group Leader of each group. For the first week of the institute, we will appoint six Group Leaders and trust that each Group will select thereafter their Group Leader for each of the last two weeks.

We ask that the Group Leaders accept the following responsibilities:

1. Appoint, or have elected, a person who will do a good job as Secretary of the group.

2. Provide for a 5 minute oral presentation for each "mini-report" session as listed in the program.

3. See that Mr. Larry Johnston receives a written report of each days work done by your group.

4. The above written report should have two sections included:

   A. This We Believe!

   B. This We Can Do!

Thank you.

TRM/mmc

SPECIAL FOLLOW-UP REPORT

Instructions: The 15th day of the Institute for Teachers of the Disadvantaged is set aside for your homework to consist of the following activities:

A. In general, you are to make 3 copies of written report, sending one copy to T. R. Miller, one to your principal, and one to your county superintendent of schools.

B. The following outline should be followed:

1. Describe the program for disadvantaged in your school.

2. Describe your role in this for:

a. last year

b. the coming year

3. Summarize, by days of the institute, the ideas and practices that have implications for the disadvantaged in your school.

4. Summarize what you feel your role should be during the coming year in relation to the disadvantaged.

C. This report is due by Friday, July 3, 1970 from all participants in the workshop whose schools will be expecting 15 days of salary reimbursement through the funds approved for this institute.

Thank You,

T. R. Miller, Director
1970 Institute for Teachers of the
Disadvantaged

VT 017 838

VT 017 838
STATE VOCATIONAL REHABILITATION AGENCY PROGRAM AND FINANCIAL PLAN: BASIC ASSUMPTIONS AND GUIDELINES.

REHABILITATION SERVICES ADMINISTRATION (DHEW), WASHINGTON, D.C.
MF AVAILABLE IN VT- MIC SET.
PUB DATE - 14MAR72 44P.
DESCRIPTORS - *GUIDELINES; STATE AGENCIES; *VOCATIONAL REHABILITATION; *REHABILITATION PROGRAMS; *PROGRAM DEVELOPMENT; PROGRAM COSTS; *OPERATING EXPENSES; REHABILITATION CENTERS
IDENTIFIERS - VOCATIONAL REHABILITATION ACT OF 1972

ABSTRACT - IN AN EFFORT TO MAKE CLEAR TO VOCATIONAL REHABILITATION AGENCIES THE DEADLINE FOR FILING PROGRAM AND FINANCIAL PLANS FOR THE 1973 FISCAL YEAR, AS WELL AS TO FACILITATE THE COMPREHENSION AND COMPLETION OF THE PLANS, THIS DOCUMENT SETTING FORTH SPECIFIC GUIDELINES WAS DEVELOPED. CONTAINED ARE SUCH ITEMS AS: (1) BASIC ASSUMPTIONS, GOALS, AND OBJECTIVES UNDERLYING THE PROGRAM, (2) ANTICIPATED OUTCOMES, (3) A LIST OF VOCATIONAL REHABILITATION APPROPRIATION REQUESTS, (4) ANNOUNCEMENTS OF FEDERAL ALLOTMENTS AND STATE FUNDS REQUIRED FOR OPERATING THE BASIC SUPPORT PROGRAM, (5) INFORMATION REGARDING FEDERAL GRANTS AND STATE FUNDS AVAILABLE FOR THE BASIC SUPPORT PROGRAM, (6) FEDERAL ALLOTMENTS AND GRANTS AVAILABLE FOR THE BENEFICIARY REHABILITATION PROGRAM (TRUST FUNDS), AND (7) A SUMMARY OF H.R. 8395 (A SEGMENT OF THE REHABILITATION ACT OF 1972). (SN)

State Vocational Rehabilitation Agency

Program and Financial Plan

March 14, 1972

Vrenay

DISCRIMINATION PROHIBITED—Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Therefore, any program or activity supported by grants from the Vocational Rehabilitation Administration, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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State Vocational Rehabilitation Agency

Program and Financial Plan

BASIC ASSUMPTIONS AND GUIDELINES (March 14, 1972)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Social and Rehabilitation Services

Rehabilitation Services Administration

Washington, D.C.

(SRS) 73–25015

861

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
SOCIAL AND REHABILITATION SERVICE
WASHINGTON, D. C. 20201

PROGRAM INSTRUCTION
RSA-PI-72-18
March 13, 1972

TO : STATE REHABILITATION AGENCIES (GENERAL)
STATE REHABILITATION AGENCIES (BLIND)

SUBJECT : Basic Assumptions and Guidelines for Completion of Program and Financial Plan for State Vocational Rehabilitation Agencies for Fiscal Years 1973, 1974 and 1978.

PURPOSE : The purpose of this Program Instruction is to inform the States that the Program and Financial Plan covering Fiscal Years 1973 through 1978 is due May 15, 1972. Two copies of the Program and Financial Plan are required, one for the Regional Office and one for RSA Central Office.

CONTENT : For your use in completing the Program and Financial Plan are the following attachments:

1. Basic Assumptions, Program Goals and Objectives.
2. Planned Performance for Fiscal Year 1973.
3. Vocational Rehabilitation Program Appropriation Requests, Fiscal Year 1973.
4. Federal Allotments and State Funds Required for the Basic Support Program for Fiscal Year 1973.
5. Federal Grants and State Funds available for the Basic Support Program for Fiscal Year 1973.
6. Federal Allotments and Grants for Beneficiary Rehabilitation Program (Trust Funds) - Fiscal Year 1973.
7. Summary of H.R. 8395.

8. Program and Financial Plan for Vocational Rehabilitation Agencies (Revised Form SRS-RSA-1), with instructions.

The revised Program and Financial Plan was approved by the Committee on Statistics and Reports of the Council of State Administrators and by the Office of Management and Budget.

INQUIRIES TO: Commissioner, Rehabilitation Services Administration

Commissioner
Rehabilitation Services
Administration

Enclosures

ATTACHMENT 1

BASIC ASSUMPTIONS PROGRAM GOALS AND OBJECTIVES
OF THE VOCATIONAL REHABILITATION PROGRAM
FISCAL YEARS 1973 - 1978

Purpose and Background:

The Program and Financial Plan prescribed by SRS/RSA is a management tool developed to assist the States in systematically developing its short and long range goals with manpower and funding resource requirements and to provide SRS/RSA with program and financial data needed to fulfill its program planning, budgeting and evaluation responsibilities in administering the national program. The PFP was developed by the Rehabilitation Services Administration in concert with counterpart agencies representing the States and Territories.

All States have had at least 3 years of experience with the PFP and have demonstrated through their achievements and efforts the competency to develop long range program planning goals. Progress made by the States has been commendable. Consistent with Administration policy, SRS/RSA feels strongly that Departmental long-range program planning should and must reflect input from the States. The States are being afforded this opportunity through the Program and Financial Plan covering Fiscal Years 1973 through 1978.

DHEW and SRS/RSA Long Range Plans and Operational Planning Systems emphasize the rehabilitation of designated priority service target populations as well as traditional clientele.

Goals and Assumptions:

(1) Long-Range Program Goal:

The long-range goal of the Vocational Rehabilitation program is to serve by 1978, on an annual basis, at least 4,000,000 handicapped individuals (statuses 02-30) and of this number to rehabilitate approximately 600,000. It is estimated that the annual cost to accomplish this goal will amount to approximately $1.9 billion in Federal-State funds. (For FY 1973, see specific goals and objectives enumerated in Attachment #2).

In developing the PFP, the States should thoroughly analyze the implications of the legislation currently being considered by the Congress and which will have a bearing on the direction of the program. Special features covered in most of the bills introduced are directed towards rehabilitation of the severely disabled, low achieving deaf and blind and for individuals suffering from end stage renal disease. These features, are of course, in addition, to that covered in existing legislation.

The States are encouraged to thoroughly analyze their own specific priority needs as well as those of national concern, and under Part I of the PFP, list those groups which will be afforded added emphasis and attention. National priorities evolve from concerns and priorities established by the States.

DHEW and SRS/RSA Long Range Planning and Operational Planning Systems emphasize the rehabilitation of designated priority service target populations as well as the traditional clients making up the various disability categories. Priority service target groups for Fiscal Years 1973-1978 are: Disabled Public Assistance Recipients, Alcoholics, Drug Addicts and Disabled Public Offenders.

(2) Funds Available:

States shall base their program planning activities for Fiscal Year 1973 on the funds identified for the Basic Support Program (Section 2) and for the Beneficiary Rehabilitation Program (Trust Funds) on the attached tables, (Attachments 4, 5, 6). In addition, you may assume that the PA-VR projects approved and funded in Fiscal Year 1972 will be funded at the same level in Fiscal Year 1973. Furthermore, the additional $11 million requested for the Expansion Program for Fiscal Year 1973 will be made available to the States for projects to serve and rehabilitate greater numbers of public assistance recipients.

Dollar limitations are not being imposed for Fiscal Years 1974-1978. The States are to base their estimates on attainable goals, with due consideration given to expanded capability, staff, etc.

(3) Coordinated Program:

Operational plans for achievement of the Administration's goals require joint planning and operation with public assistance agencies (including use of social services, child care and income disregard), maximum use of Medicaid resources for restorative health services and the full use of remedial and vocational education, WIN and other related training and community resources. Efforts must be made to ascertain that appropriate services are provided to the severely handicapped and in particular to those referred from manpower programs, public employment offices, Social Security Administration offices, other Federal, State and local offices and from the private sector. Agencies should ascertain that services are available to any Civil employee of the United States disabled while in the performance of his duty on the same terms and conditions as apply to other persons and assume that no

residence requirement will be imposed which excludes from services any individual who is present in the State.

Particular attention should be devoted to coordination between the rehabilitation agency and the agency (or agencies) in the State responsible for the program administered under the Developmental Disabilities Act.

(4) Continuous Planning and Evaluation:

In the formulation of the program and financial plan, it is presumed that State agencies are making full use of staff assigned to the continuous planning function as required by Section 5(a)(13) of the Vocational Rehabilitation Act, Section 401.15 Vocational Rehabilitation Regulations and for which guidelines are provided by Chapter 5, Section 6 of the Vocational Rehabilitation Manual, Continuing State Program Planning and Evaluation Studies of the Vocational Rehabilitation Program. Increasing emphasis will be placed on formalized procedures whereby State agencies may evaluate their own efficiency and effectiveness.

Narrative Justifications:

Narrative justifications have proven to be of tremendous value to SRS/RSA in establishing goals that are responsive to State's needs, in plotting trends based on empirical data, in defining problems and issues, in evaluating program plans and activities, and in developing program plans, with resource requirements based on significant data presented by 82 State VR agencies.

The narrative portion of the PFP is without a doubt, one of the most useful portions of the plan in establishing policy and in assisting management in the decision making process. It covers practically all of the substantive program elements of the overall program and emphasizes the basic issues and needs of each as they exist today and will be handled in the future.

All of the program elements listed in Part VI must be addressed. You will note that we have added Research and Training. SRS/RSA feels strongly that projects funded in this area should be directed towards enhancing the States program effort. Oral general statements on this subject have been received in the past and were very useful to a certain degree. We are now asking for specifics to systematically justify need and output results.

The narrative must be prepared in the format prescribed if we are to obtain uniform and comprehensive data. The narrative should be very useful to the States and SRS/RSA in answering practically any type of question asked on the subject being addressed. We have found the information very useful in our discussions with the Department, Office of Management and Budget, the Congress and the general public. It should also serve your needs in these particular areas.

Operational Planning System - Fiscal Year 1973:

Elements of the DHEW/SRS Operational Planning System for Fiscal Year 1973 are currently being developed and will be provided the States upon receipt.

Legislative Developments:

Legislation authorizing the vocational rehabilitation program expires June 30, 1972. Several bills have been introduced into both Houses of Congress to extend and expand legislative authority.

At present, it is impossible to determine the exact form in which the final legislation will emerge. It seems certain, however, that the new legislation will provide for expanded funding and scope of program activities, possibly including special mechanisms for programs to serve the severely disabled, low achieving blind, low achieving deaf and for end stage renal disease.

For your information, we have attached a summary of the major provisions of H.R. 8395, which has been acted on by the House Committee on Education and Labor. You should consider the implications of this bill in developing your plans. As additional information becomes available, we will forward it to you.

ATTACHMENT 2

Planned Accomplishments - Fiscal Year 1973

Handicapped Individuals	Fiscal Years 1971	1972	1973	Percentage Increase 1973 over 1972
Served:	1,001,660	1,130,000	1,195,000	6%
Rehabilitated:	291,272	312,000	326,000	4%
Within Totals Above Accomplish the Following:				
Selected Disabled Target Groups				
Public Assistance Recipients Served	130,000	203,000	253,000	25%
Public Assistance Recipients Rehabilitated	40,321	58,000	66,000	14%
Public Offenders Rehabilitated	15,200	20,000	22,500	13%
Alcoholics Rehabilitated	14,400	15,000	16,000	7%
Narcotic Addicts Rehabilitated	1,000	1,600	2,000	25%
Social Security Insurance Beneficiaries Rehabilitated	19,000	20,800	23,000	11%
Selected Disability Categories				
Mentally Ill Rehabilitated	70,400	74,600	83,000	11%
Mental Retardates Rehabilitated	37,800	43,700	47,800	9%
Blind and Visually Impaired Rehabilitated	23,900	26,300	28,800	10%
Deaf, Hard of Hearing & Speech Impaired Rehabilitated	15,400	16,200	17,000	5%
Heart Disease, Cancer & Stroke Rehabilitated	11,800	12,500	14,700	18%
Other Categories	131,972	138,700	134,700	
Total Rehabilitations	291,272	312,000	326,000	

DSPEO

ATTACHMENT 3

RSA APPROPRIATIONS
(In Millions of Dollars)

Major Programs	Appropriation FY 1971	FY 1972	FY 1973
Federal-State Basic Support Program	$503.0	560.0	610.0
Innovation (Section 3)	3.2	-	-
Rehabilitation Services Projects	27.6	54.7	65.8
Vocational Rehabilitation Facilities	1.7	3.1	-
Formula Grants for Developmentally Disabled	11.2	21.7	21.7
Services for Developmentally Disabled	23.6	23.6	18.5
Facilities for Mentally Retarded (UAF)	-	4.2	4.2
TOTAL	$570.3	667.3	720.2
Trust Fund Program	24.7	30.5	34.0
Rehabilitation Training	33.1	27.7	27.7
Research, Demonstration and Training Centers	29.3	32.1	32.1

DSPFO

Federal Allotments and State Funds Required to Match Such Allotments for the Basic State Grants Program Under Section 2 of the Vocational Rehabilitation Act

State or Territory	1971 Actual		1972 Estimate		1973 Estimate	
	Federal Allotment	State Funds Required	Federal Allotment	State Funds Required	Federal Allotment	State Funds Required
Total	$515,000,000	$136,085,747 1/	$580,000,000	$147,012,552 1/	$645,000,000	$161,539,454 1/
Alabama	14,452,224	3,789,807	15,750,809	3,937,702	17,539,591	4,384,898
Alaska	1,000,000	250,000	1,000,000	250,000	1,000,000	250,000
Arizona	5,217,239	1,304,310	5,866,176	1,466,544	6,683,999	1,671,000
Arkansas	8,415,019	2,488,922	9,023,266	2,488,922	10,041,459	2,510,365
California	32,047,115	8,011,779	37,376,217	9,344,054	41,392,601	10,348,150
Colorado	5,151,909	1,571,530	6,300,698	1,575,174	7,130,421	1,782,605
Connecticut	3,993,639	1,107,686	4,501,056	1,125,264	5,005,739	1,251,435
Delaware	1,000,000	342,244	1,148,032	342,244	1,273,699	342,244
Dist. of Columbia	4,286,573	1,071,643	4,582,581	1,145,645	4,914,372	1,228,593
Florida	18,585,704	4,646,426	20,668,031	5,167,008	23,551,632	5,887,908
Georgia	16,061,443	4,689,915	17,046,821	4,689,915	19,109,119	4,777,280
Guam	537,165	134,291	534,430	133,608	563,727	140,932
Hawaii	1,724,232	458,776	1,864,125	466,031	2,120,062	530,016
Idaho	2,341,531	585,383	2,767,011	691,753	3,132,889	783,222
Illinois	17,227,226	4,833,333	20,704,483	5,176,121	22,797,255	5,699,314
Indiana	11,646,867	2,911,717	14,058,086	3,514,521	15,564,254	3,891,063
Iowa	6,679,190	1,926,003	8,156,454	2,039,114	9,001,714	2,250,429
Kansas	5,893,568	1,473,392	6,639,096	1,659,774	7,283,957	1,820,989
Kentucky	11,947,563	2,986,891	13,107,321	3,276,830	14,692,865	3,673,216
Louisiana	13,604,329	3,401,082	14,778,390	3,694,598	16,479,110	4,119,777
Maine	3,148,346	787,086	3,687,374	921,844	4,086,975	1,021,744
Maryland	7,474,881	2,603,801	8,598,927	2,603,801	9,583,210	2,603,801
Massachusetts	10,279,680	2,569,920	11,614,197	2,903,549	12,824,220	3,206,055
Michigan	17,219,501	4,304,875	20,313,061	5,078,265	22,477,914	5,619,478
Minnesota	9,225,574	3,020,854	10,711,096	3,020,854	11,910,915	3,020,854
Mississippi	11,160,340	2,790,085	11,520,065	2,880,016	12,823,481	3,205,870
Missouri	12,214,166	3,053,542	13,971,514	3,492,879	15,481,913	3,870,478
Montana	2,058,476	514,619	2,443,652	610,913	2,738,841	684,710
Nebraska	3,636,455	909,114	4,330,115	1,082,529	4,815,082	1,203,771
Nevada	1,000,000	269,460	1,000,000	269,460	1,019,798	269,460

Federal Allotments and State Funds Required to Match Such Allotments for the Basic State Grants Program Under Section 2 of the Vocational Rehabilitation Act

State or Territory	1971 Actual		1972 Estimate		1973 Estimate	
	Federal Allotment	State Funds Required	Federal Allotment	State Funds Required	Federal Allotment	State Funds Required
New Hampshire	$ 1,878,833	$ 469,708	$ 2,174,458	$ 543,614	$ 2,474,265	$ 618,566
New Jersey	11,815,889	3,106,804	13,749,191	3,437,298	15,277,368	3,819,342
New Mexico	3,440,007	860,002	4,056,540	1,014,135	4,520,026	1,130,006
New York	28,833,090	8,069,260	30,953,392	8,069,260	34,108,404	8,527,101
North Carolina	19,081,989	4,770,497	20,285,508	5,071,377	22,685,720	5,671,430
North Dakota	2,079,042	519,760	2,410,718	602,680	2,657,991	664,498
Ohio	24,204,777	6,051,194	27,940,979	6,985,245	30,841,485	7,710,371
Oklahoma	8,360,010	2,291,667	9,337,877	2,334,469	10,533,549	2,633,387
Oregon	5,000,609	1,378,795	5,918,578	1,479,644	6,706,936	1,676,734
Pennsylvania	27,930,487	7,732,058	32,179,632	8,044,908	35,364,587	8,841,147
Puerto Rico	14,626,990	3,656,748	16,524,322	4,131,080	17,986,205	4,496,551
Rhode Island	2,020,935	564,845	2,265,491	566,373	2,546,719	636,680
South Carolina	11,059,367	2,891,151	11,654,844	2,913,711	13,101,703	3,275,426
South Dakota	2,199,467	549,867	2,493,986	623,497	2,745,882	686,471
Tennessee	14,841,498	3,710,374	16,245,708	4,061,427	18,229,381	4,557,345
Texas	34,656,068	8,664,017	37,677,065	9,419,266	42,386,393	10,596,598
Utah	3,356,046	839,012	4,011,796	1,002,949	4,524,799	1,131,200
Vermont	1,309,246	366,594	1,485,199	371,300	1,676,696	419,174
Virginia	13,946,827	3,486,707	15,171,519	3,792,880	16,996,300	4,249,075
Virgin Islands	300,812	75,203	387,001	96,750	411,189	102,797
Washington	6,718,459	1,837,152	8,008,131	2,002,033	8,893,430	2,223,358
West Virginia	6,955,231	2,016,620	7,667,121	2,016,620	8,520,898	2,130,225
Wisconsin	10,154,363	3,116,332	12,270,770	3,116,332	13,578,669	3,394,667
Wyoming	1,000,000	252,804	1,067,090	266,772	1,190,591	297,648

1/Adjusted for 1969 Maintenance of Effort provision. Actual matching funds may vary as a result of the earnable matching rate applicable to construction expenditures.

Federal Grants and State Funds Available for Basic State Grants Program
Under Section 2 of the Vocational Rehabilitation Act

State or Territory	1971 Actual		1972 Estimate		1973 Estimate	
	Federal Grants	State Funds	Federal Grants	State Funds	Federal Grants	State Funds
Total	$502,745,072[1]	$132,772,034[2]	$560,000,000[1]	$141,762,552[2]	$610,000,000[1]	$152,544,700[2]
Alabama	14,452,224	3,789,807	15,750,809	3,937,702	17,539,591	4,384,898
Alaska	1,000,000	250,000	1,000,000	250,000	1,000,000	250,000
Arizona	5,037,536	1,259,384	5,866,176	1,466,544	5,984,800	1,496,200
Arkansas	8,415,019	2,488,922	9,023,266	2,488,922	10,041,459	2,510,365
California	32,047,115	8,011,779	37,117,615	9,279,404	38,276,000	9,569,000
Colorado	5,151,909	1,571,530	6,300,698	1,575,174	6,573,000	1,643,250
Connecticut	3,993,639	1,107,686	4,501,056	1,125,264	4,784,000	1,196,000
Delaware	1,000,000	342,244	1,148,032	342,244	1,273,699	342,244
Dist. of Columbia	4,286,573	1,071,643	4,582,581	1,145,645	4,914,372	1,228,593
Florida	18,585,704	4,646,426	20,668,031	5,167,008	23,327,157	5,831,789
Georgia	16,061,443	4,689,915	17,046,821	4,689,915	18,740,000	4,689,915
Guam	537,165	134,291	534,430	133,608	563,727	140,932
Hawaii	1,724,232	458,776	1,864,125	466,031	2,120,062	530,015
Idaho	2,341,531	585,383	2,767,011	691,753	3,132,889	783,222
Illinois	17,227,226	4,833,333	20,704,483	5,176,121	22,797,255	5,699,314
Indiana	8,224,420	2,056,105	7,919,508	1,979,877	8,661,188	2,165,297
Iowa	6,679,190	1,926,003	8,156,454	2,039,114	9,001,714	2,250,428
Kansas	5,893,568	1,473,392	5,382,000	1,345,500	5,560,000	1,390,000
Kentucky	11,947,563	2,986,891	12,560,861	3,140,214	13,044,000	3,261,000
Louisiana	13,604,329	3,401,082	14,778,390	3,694,598	14,363,052	3,590,763
Maine	2,001,532	500,383	2,129,119	532,280	2,415,680	603,920
Maryland	7,474,811	2,603,801	8,598,927	2,603,801	9,583,210	2,603,801
Massachusetts	10,279,680	2,569,920	11,614,197	2,903,549	12,824,220	3,206,055
Michigan	17,219,501	4,304,875	18,600,533	4,650,133	20,837,328	5,209,332
Minnesota	9,225,574	3,020,854	10,711,096	3,020,854	11,910,915	3,020,854
Mississippi	11,160,340	2,790,085	11,520,065	2,880,016	11,724,000	2,931,000
Missouri	12,214,166	3,053,542	13,971,514	3,492,879	14,820,800	3,705,200
Montana	2,058,476	514,619	2,443,652	610,913	2,366,252	591,563
Nebraska	3,636,458	909,114	4,330,115	1,082,529	3,931,200	982,800
Nevada	1,000,000	269,460	1,000,000	269,460	1,019,798	269,460

Federal Grants and State Funds Available for Basic State Grants Program
Under Section 2 of the Vocational Rehabilitation Act

State or Territory	1971 Actual		1972 Estimate		1973 Estimate	
	Federal Grants	State Funds	Federal Grants	State Funds	Federal Grants	State Funds
New Hampshire	$ 1,846,748	$ 461,687	$ 1,986,261	$ 496,565	$ 2,373,952	$ 593,488
New Jersey	11,815,889	3,106,804	13,749,191	3,437,298	13,736,000	3,434,000
New Mexico	3,214,934	803,734	4,056,540	1,014,135	3,627,000	906,750
New York	28,833,090	8,069,260	30,953,392	8,069,260	34,108,404	8,527,101
North Carolina	19,081,989	4,770,497	20,285,508	5,071,377	22,685,720	5,671,430
North Dakota	2,079,042	519,760	2,410,718	602,680	2,259,000	564,750
Ohio	19,435,271	4,858,818	24,704,000	6,176,000	27,276,000	6,819,000
Oklahoma	8,360,010	2,291,667	9,337,877	2,334,469	10,533,549	2,633,387
Oregon	5,000,609	1,378,795	5,918,578	1,479,644	6,706,936	1,676,734
Pennsylvania	27,930,487	7,732,058	32,179,632	8,044,908	35,364,587	8,841,147
Puerto Rico	14,626,990	3,656,748	14,024,322	3,506,080	16,719,524	4,179,881
Rhode Island	2,020,935	564,845	2,265,491	566,373	2,368,080	592,020
South Carolina	11,059,367	2,891,151	11,654,844	2,913,711	13,101,703	3,275,426
South Dakota	2,199,467	549,867	2,493,986	623,497	2,744,000	686,000
Tennessee	11,363,080	2,840,770	13,000,000	3,250,000	15,624,500	3,906,125
Texas	34,656,068	8,664,017	37,418,469	9,354,617	42,386,393	10,596,598
Utah	3,356,046	839,012	4,011,796	1,002,949	4,524,799	1,131,200
Vermont	1,309,246	366,594	1,485,199	371,300	1,676,696	419,174
Virginia	13,946,827	3,486,707	15,171,519	3,792,880	16,996,300	4,249,075
Virgin Islands	300,000	75,000	288,000	72,000	312,000	78,000
Washington	6,718,459	1,837,152	8,008,131	2,002,033	8,568,000	2,142,000
West Virginia	6,955,231	2,016,620	7,667,121	2,016,620	8,520,898	2,130,224
Wisconsin	10,154,363	3,116,332	12,270,770	3,116,332	12,464,000	3,116,332
Wyoming	1,000,000	252,894	1,067,090	266,772	1,190,591	297,648

1/Includes $1,000,000 for Evaluation of Vocational Rehabilitation Program.
2/Adjusted for Maintenance of Effort provision. Actual matching funds may vary as a result of the earnable matching rate applicable to construction expenditures.

Federal Grants for States Under the Beneficiary Rehabilitation Program for Fiscal Years 1971-1972-1973

State or Territory	Actual 1971	Estimate 1972	Estimate 1973
Total	$24,731,440	$30,445,150	$34,000,000
Alabama	627,986	741,701	801,565
Alaska	17,501	26,120	26,120
Arizona	243,377	208,108	296,129
Arkansas	408,173	459,670	521,011
California	1,931,556	2,771,248	3,207,205
Colorado	241,176	250,988	259,731
Connecticut	283,147	336,187	375,212
Delaware	61,172	71,035	79,724
Dist. of Col.	71,006	103,109	113,913
Florida	1,000,596	1,137,478	1,290,312
Georgia	754,677	878,462	987,481
Guam	5,000	5,313	5,313
Hawaii	55,999	73,026	84,274
Idaho	80,335	95,573	111,006
Illinois	1,108,747	1,319,121	1,456,765
Indiana	359,888	645,458	731,469
Iowa	323,608	343,113	386,709
Kansas	220,093	264,027	292,486
Kentucky	582,869	675,487	743,457
Louisiana	517,745	633,594	740,059
Maine	131,210	154,304	181,102
Maryland	376,545	468,567	468,755
Massachusetts	198,000	689,671	767,263
Michigan	1,047,547	1,171,005	1,347,477
Minnesota	349,962	387,768	430,903
Mississippi	522,000	531,293	544,458
Missouri	654,456	732,189	829,166
Montana	114,731	114,731	114,347
Nebraska	120,748	174,164	189,918
Nevada	120,841	126,469	126,469

Federal Grants for States Under the Beneficiary Rehabilitation Program for Fiscal Years 1971-1972-1973

State or Territory	Actual 1971	Estimate 1972	Estimate 1973
New Hampshire	74,105	88,960	100,226
New Jersey	743,176	908,932	1,016,894
New Mexico	118,938	135,827	157,730
New York	2,339,585	2,636,196	2,881,568
North Carolina	641,964	965,175	1,074,530
North Dakota	131,133	136,855	136,855
Ohio	1,242,625	1,380,557	1,540,510
Oklahoma	384,254	472,493	526,051
Oregon	275,391	307,816	357,749
Pennsylvania	1,567,391	1,893,175	2,070,110
Puerto Rico	100,000	467,684	566,225
Rhode Island	124,132	146,824	163,696
South Carolina	460,580	547,728	610,608
South Dakota	110,711	110,711	110,711
Tennessee	527,730	722,904	828,278
Texas	1,239,857	1,416,095	1,609,152
Utah	86,444	97,564	110,893
Vermont	60,465	67,757	74,306
Virginia	612,751	791,471	830,714
Virgin Islands	5,000	5,313	5,313
Washington	417,812	428,292	455,408
West Virginia	458,705	542,091	598,809
Wisconsin	445,577	547,489	619,595
Wyoming	32,423	38,262	44,270

H.R. 8395

ATTACHMENT 7

BRIEF EXPLANATION OF "REHABILITATION ACT OF 1972" OF H.R. 8395 (Committee Print)

Arrangement of Provisions

The bill is written as a replacement of the present Vocational Rehabilitation Act. The bill includes the entire Rehabilitation Act as it would be after amendments adopted in subcommittee. Existing legislation, when repeated in this bill, is in plain type. New parts are in italics. The last major rewrite of the act took place in 1965. Major amendments in 1968 and this year make it desirable to write the act in a more logical manner.

The arrangement of provisions follows this scheme:

(1) The first part of the bill, not given a title number, contains provisions that are applicable to all titles of the bill. It includes provisions for advance funding and joint funding, and a provision for submitting a consolidated State plan.

(2) Title I contains the provisions having to do with grants to the States for rehabilitation services, including grants to initiate or to expand services.

(3) Title II contains provisions having to do with grants to States for evaluation of rehabilitation potential. This title is identical with section 15 of the present Vocational Rehabilitation Act.

(4) Title III contains provisions for a new program for the severely handicapped.

(5) Title IV contains provisions of the present act, and new provisions, which state special Federal responsibilities in connection with rehabilitation. The existing provisions are found scattered throughout the present legislation. This title includes new provisions for:

- (A) Mortgage guarantee for construction.
- (B) National information and resource center.
- (C) National centers for the deaf.
- (D) A National Commission on Transportation and Housing.
- (E) Centers for spinal cord injured.
- (F) Services for persons suffering from end stage renal disease.

(6) Title V contains expanded provisions for program evaluation and allows up to $2 million for such.

(7) Title VI contains the provisions needed for moving from the present act to the new law and provides for establishing an office of Rehabilitation Services Administration.

Section-by-Section Explanation

Section 1, page 89

This section contains the title of the act, a brief statement of purpose, and a table of contents.

Section 2, page 91—PURPOSE

This section contains a declaration of *purpose*. The present act lacks a clear and comprehensive statement of this kind. The statement is written so as to relate generally to the various programs provided for in the bill.

Section 3, page 91—ADVANCED FUNDING

This section contains provisions for *advanced funding* to prevent a situation in which a program has to operate on the basis of continuing resolutions, when an appropriation bill is not passed by June 30. Advanced funding will make possible better planning and more effective use of funds appropriated. The advanced funding language in the bill is similar to that found in the manpower legislation sent to Congress by the administration.

Section 4, page 92—JOINT FUNDING

This section permits agencies financed under the act to enter into *joint funding* relationships with other agencies receiving Federal funds. In such a project, one of the agencies could be given responsibility for administering the funds of all the agencies involved in financing the project. A single Federal share could prevail for all the funds going into the project. This provision will permit effective joint funding and administration of programs. The language in the present Vocational Rehabilitation Act having to do with joint funding has been found to be inadequate.

Section 5, page 92—CONSOLIDATED STATE PLAN

This section permits a State to submit a *consolidated State plan* to cover all or part of the titles of this act and the Development Disabilities Services and Construction Act of 1970. Since this latter act is administered by the Rehabilitation Services Administration and is closely related to rehabilitation programs in the States, it is felt that this program should be included among those with respect to which it is possible to include in a consolidated plan.

The provisions governing such consolidated plans are those generally in effect for State plans at this time. A single average Federal share for the programs covered by the consolidated State plan may be established by the Secretary on request of the Governor of the State. Not to exceed 10 percent of the appropriations for any one program may be transferred to another program.

Section 6, page 95—DEFINITIONS

There is nothing new in the definitions in this part of the bill with the exception of making America Samoa and the Trust Territories a "State" regarding the Federal share under this act.

TITLE I, PAGE 96, VOCATIONAL REHABILITATION SERVICES

The provisions of this title pertain to two grant-in-aid programs, the *basic State-Federal vocational rehabilitation program* financed at the present time under Section 2, and *a new grant-in-aid program for initiation and expansion of* rehabilitation programs, which includes some of the provisions of the present Section 4 with additional programs added.

Section 100, page 96—DECLARATION OF PURPOSE

This section contains a *declaration of purpose.* This section is new, present legislation having no statement of purpose of the State-Federal vocational rehabilitation program.

Section 101, page 96—AUTHORIZATIONS

This section contains the *authorizations for appropriations* for the basic State-Federal vocational rehabilitation program and for the new initiation and expansion program. Appropriation authority is for 3 years, ending June 30, 1975. Authorization for basic program: $800 million, $950 million, $1,100 million for expansion: $50 million, $60 million, and $75 million.

Section 102, page 97—ALLOTMENT FORMULA

This section contains the *allotment formula for the basic State-Federal vocational rehabilitation program.* Allotments will continue to be made based upon population and per capita income (allotment percentage) squared. A minimum allotment to a State will be $2 million

per annum or ¼ of 1 percent but no less than $2 million (presently $1 million). Private funds may be used as State funds to match Federal funds for construction and establishment of a rehabilitation facility, subject to regulations of the Secretary.

Section 103, page 100—INITIATION AND EXPANSION

This section sets up a program of *grants to the States* to assist them in developing and carrying out special programs *to initiate* or *expand services to classes of handicapped individuals which have unusually difficult problems in connection with their rehabilitation* and responsibility for whose treatment, education, and rehabilitation is shared by the States vocational rehabilitation agency with other agencies. This section also incorporates the expansion grant authority in section 4 of the present act.

Funds will be allotted to States on the basis of population alone. States will develop projects which will be submitted to the Secretary of Health, Education, and Welfare for approval. If a State does not use all of its allotment, the unused part of the allotment can be reallotted to another State. A 90-percent Federal share will prevail in this program. Any one project developed under the program would be limited to 3 years.

Section 104, page 103—STATE PLANS

This section contains *State plan* provisions governing the State-Federal grant-in-aid program. There are two principal changes from existing plan provisions:

(1) Administration of the vocational rehabilitation program by a local agency, under State supervision, is permitted. This replaces the provision found in existing law which has not been used. It would put the vocational rehabilitation agency in position to cooperate with other agencies which move toward local administration.

(2) The list of State agencies with which the State vocational rehabilitation agency must have cooperative arrangements is updated to include public assistance agencies, manpower agencies, and others.

Section 105, page 112—DEFINITIONS

This section includes the *definitions* governing the Federal grant-in-aid rehabilitation programs. The changes are as follows:

(1) The definition of rehabilitation services is amended to include "follow along and other post-employment services necessary" to assist handicapped people to maintain their employment. This is to emphasize the fact that some handicapped people must not be "closed" when employed but must be given post-employment services for an indefinite period of time. The definition of services also clarifies that an individual may select to have an examination by an optometrist to determine blindness.

(2) The definition of the handicapped individual is revised to reflect a less cumbersome criteria for service.

(3) The term "local agency" is defined to mean an agency of a unit of local government (or combination of units).

TITLE II, PAGE 118—EVALUATION OF REHABILITATION POTENTIAL

This title is the same as section 15 of the present Vocational Rehabilitation Act, "Evaluation of Rehabilitation Potential", with one exception.

(1) In a State with more than one agency administering the vocational rehabilitation program, the State may apportion its allotment between the agencies. This permits participation in the program by State agencies providing vocational rehabilitation to the blind.

Section 200, page 118—DECLARATION OF PURPOSE

Section 201, page 118—AUTHORIZATION OF APPROPRIATIONS

Section 202, page 119—STATE ALLOTMENTS

Section 203, page 120—STATE PLANS

Section 204, page 123—DEFINITIONS

TITLE III, PAGE 125—COMPREHENSIVE SERVICES TO THE SEVERELY HANDICAPPED

Section 300, page 125—PURPOSE

The purpose of this title is to authorize grants (supplementary to the basic program) to assist in developing and implementing plans for meeting the current and future needs of severely handicapped individuals, including the assessment of disability and rehabilitation potential and the training of special personnel needed.

Section 301, page 125—AUTHORIZATION OF APPROPRIATIONS

For 3 years, $30 million, $50 million, and $80 million.

Section 302, page 125—ALLOTMENT

Allotment based on population—minimum of $50,000.

Section 303, page 126—STATE PLANS

Requires a State plan.

Section 304, page 127—PAYMENTS TO STATES

Federal share to be 80 percent (same as basic program).

Section 305, page 128—DEFINITIONS

In this section "severely handicapped individual" is defined to be one who is (1) under a physical or mental disability so serious that it limits substantially his ability to function in his family and community as one without such serious disability may be expected to function and (2) who, with the assistance of comprehensive rehabilitation services can reasonably be expected to improve substantially his ability to live independently and function normally in his family and community.

The term "comprehensive rehabilitation services" is defined to be any appropriate vocational rehabilitation service as defined in title I of this act and any other service that will make a substantial contribution in helping the severely handicapped individual improve his ability to live independently or the minimum of care and function normally in his family and community. It also includes preventive and restorative sources which will diminish the present or prospective need of a severely handicapped individual for comprehensive rehabilitation services.

Section 306, page 128—NATIONAL ADVISORY COUNCIL

Establishes a National Advisory Council on the Severely Handicapped to advise the Secretary and make an annual report to Congress.

Section 307, page 130—SPECIAL PROJECTS

Provides for special projects to pay part of the cost for research, demonstration and training. Ten percent but not more than $500,000 of sums appropriated under this title may be used by the Secretary for *special projects* for research, demonstration and training.

Section 308, page 130—NONDUPLICATION

TITLE IV, PAGE 131—SPECIAL FEDERAL RESPONSIBILITIES

In the present Vocational Rehabilitation Act, the special responsibilities of the Federal Government are scattered throughout the legislation. In this title, all of the Federal responsibilities have been brought together and some additional responsibilities included.

Section 400, page 131—DECLARATION OF PURPOSE

This section contains a *declaration of purpose* and listing of programs which are the responsibility of the Secretary.

Section 401, page 132—AUTHORIZATIONS

This section contains *authorizations for appropriations* for the programs listed below:

(a) Administration of act—Such sums as may be necessary.

(b) Construction and facility improvement—

Fiscal Year 1973	$35 million
Fiscal Year 1974	$45 million
Fiscal Year 1975	$55 million

(c) Special Projects (including new careers, biomedical engineering research, and international research)

Fiscal Year 1973	$100 million
Fiscal Year 1974	$125 million
Fiscal Year 1975	$150 million

Migrant program

Fiscal Year 1973 and thereafter	$10 million

(d) National Information and Resource Center for the Handicapped.

Fiscal Year 1973 and thereafter	$750 thousnad

(e) National Center for Deaf-Blind Youths and Adults—such sums as may be necessary.

(f) Comprehensive Rehabilitation Centers for Deaf Youths and Adults—such sums as may be necessary.

(g) National Commission on Transportation and Housing for the Handicapped.

Fiscal Year 1973 and for each two succeeding years	$250 million

(h) National Centers for Spinal Cord Injured—such sums as may be necessary.

(i) Services for persons suffering from end stage renal disease

Fiscal Year 1973 and for each two succeeding years	$25 million

Section 402, page 134—ADMINISTRATION

This section includes the authority needed by the Secretary to administer the act. Only two changes have been made from existing legislation.

(1) In subsection (c), the authority of the Secretary is broadened to authorize him to make grants as well as to enter into contracts to "conduct research studies, investigations, demonstrations and evaluations" related to programs authorized by this act. In the new part, this authority is broadened to include making grants or contracts having to do with architectural, transportation, and other environmental and attitudinal barriers to the rehabilitation of handicapped individuals, including the problems of *the homebound and the elderly blind.*

(2) Under subsection (e)(1), the Secretary is authorized to provide technical assistance in the area of architectural barriers as well as in other areas in which he already has specific authority to any public or private agency or institution.

Section 403, page 137—EMPLOYMENT OPPORTUNITIES

This section incorporates section 8 of the Vocational Rehabilitation Act having to do with *increasing employment opportunities* for the handicapped.

Section 404, page 137—GRANTS FOR CONSTRUCTION OF REHABILITATION FACILITIES

This section incorporates without important change section 12 of the present Vocational Rehabilitation Act having to do with rehabilitation facilities.

Section 405, page 142—MORTGAGE INSURANCE

This section authorizes the Secretary to insure any mortgage covering a new multipurpose rehabilitation facility. Principal shall not exceed $250 million.

Section 406, page 148—INTEREST GRANTS

This section authorizes the Secretary to make annual interest grants in order to reduce costs. Such grants may not exceed $1 million in fiscal year 1974, $3 million in fiscal year 1975, and $5 million in fiscal year 1976.

Section 407, page 149—REHABILITATION FACILITY IMPROVEMENT

No change from present act section 13(b)(1).

Section 408, page 154—SPECIAL PROJECTS

This section includes the authority the Secretary currently has under section 4 of the Vocational Rehabilitation Act to pay the part of the cost of projects for demonstration, research, training, traineeships and projects for the establishment of special facilities and services which, in his judgment, hold promise of making a substantial contribution to the solution of rehabilitation problems common to all of the States. In this bill, the expansion grants authority is taken from this section and included in the title II program for initiation and expansion of rehabilitation services. This section also contains, somewhat broadened, the authority of the Secretary to undertake projects which experiment with new services or patterns of services, including new careers for handicapped individuals, new careers for other individuals who will serve handicapped people, a biomedical engineering research program, and international research, training and technical assistance. (The authority for undertaking new careers programs is currently found in section 4.)

Section 409, page 159—NATIONAL INFORMATION AND RESOURCE CENTER

This provision places in the Office of the Secretary responsibility for bringing together information, etc. for the various service programs now in DHEW. It is included in this bill in order that it may be seen in connection with other responsibilities the Secretary has in administering rehabilitation legislation.

Section 410, page 161—NATIONAL CENTER FOR DEAF-BLIND YOUTH AND ADULTS

In section 410, the language is identical with that found in section 16 of the present act.

Section 411, page 165—COMPREHENSIVE REHABILITATION CENTERS FOR DEAF YOUTHS AND ADULTS

This is a new section. It authorizes the establishment by the Secretary of comprehensive rehabilitation centers for deaf youths and adults with particular *emphasis upon the low (under) achieving* deaf. It also permits research in the nature and prevention of problems of the low achieving deaf and the rehabilitation of these individuals, and the development of a

program of public understanding of the problems of the low achieving deaf. The Secretary would have the authority to enter into an agreement with public or other nonprofit organizations to establish and operate such centers.

Section 412, page 168—NATIONAL COMMISSION ON TRANSPORTATION AND HOUSING FOR THE HANDICAPPED

This section authorizes the Secretary of Health, Education, and Welfare to establish a National Commission on Transportation and Housing for the Handicapped. The membership of the Commission is not to exceed 15 members, with the Secretary of Housing and Urban Development, the Secretary of Transportation, and the Secretary of the Treasury (or their designees) serving as ex officio members.

The purpose of the Commission shall be to consider how and to what extent transportation barriers impede the mobility of the handicapped; how travel expenses in connection with transportation to and from work for handicapped people can be met or subsidized when such individuals are unable to use mass transit systems or need special equipment in private transportation; what the housing needs of the handicapped people are and determine what is being done, especially by public and other nonprofit agencies and groups having interest in and the capacity to deal with the elimination of barriers from public transportation systems; how to prevent the incorporation of needless barriers in new or expanded transportation systems; how to make housing available and accessible to the handicapped and to meet sheltered housing needs; and prepare plans and proposals for further action as may be necessary along the lines indicated.

This Commission is modeled to a considerable extent after the National Commission on Architectural Barriers, whose work made a significant impact in that field. The housing and transportation problems of handicapped people are acute and must be dealt with. The Commission is given the usual authority to appoint advisory and technical experts and consultants.

Section 413, page 171—NATIONAL CENTERS FOR SPINAL CORD INJURIES

This section is new and authorizes the Secretary to pay part or all of the costs of the establishment and operation of centers for vocational rehabilitation of persons suffering from spinal cord injuries.

Section 414, page 175—GRANTS FOR SERVICES FOR END STAGE RENAL DISEASE

This section is new and authorizes the Secretary to make grants to States and public and other nonprofit organizations and agencies to pay part of the cost of projects for providing special services, artificial kidneys, and supplies necessary for the rehabilitation of handicapped individuals suffering from end stage renal disease.

TITLE V, PAGE 175—PROGRAM AND PROJECT EVALUATION

Section 501–504, pages 175–177, provides for expanding the present evaluation provisions of the act and requires that the Secretary make a report to the President for transmittal to Congress of the activities carried out under his act. The Secretary is authorized to spend not more than 1 percent of funds appropriated or $2 million whichever is greater.

TITLE VI, PAGE 177—MISCELLANEOUS

Section 601, page 177—EFFECTIVE DATE July 1, 1972

Section 602, page 178—EFFECT ON EXISTING LAW

Section 603, page 178—REHABILITATION SERVICES ADMINISTRATION

This section establishes within the Department of Health, Education and Welfare, a Rehabilitation Services Administration.

INSTRUCTIONS FOR COMPLETION OF PROGRAM AND FINANCIAL PLAN

FISCAL YEARS 1973, 1974, 1978

Part I. Program Objectives

The purpose of this Part is to summarize the basic elements of the State vocational rehabilitation program to include estimates of eligible disabled persons and program objectives for each Fiscal Year included in the Plan. Attention is drawn to the fact that a span of six years is included in the Plan; program and financial data is required for three fiscal years 1973, 1974 and 1978. (FYs 1975, 1976 and 1977 are omitted, although these three Fiscal Years must be taken into consideration in the calculations for FY 1978).

1. Universe of Eligible Disabled Persons: Include here the most recent estimate of the number of disabled persons in the State who meet eligibility requirements for each designated Fiscal Year of the Plan. Provide for annual incident level of disability, less those served in a given fiscal year.

   Indicate source and date of data upon which universe is based.

2. Program Indicators: Caseload estimates concerning number of persons served, rehabilitated and closures not rehabilitated are as defined in Chapter 13, of the Vocational Rehabilitation Manual.

   a. Number of Persons to be Served (Status 02-30). Enter the estimated number of persons who will be provided some form of accountable service under programs financed by the Vocational Rehabilitation Act. For this purpose consider statuses "02" through "30".

   b. Number of Persons to be Rehabilitated. Enter the estimated number of persons who will be vocationally rehabilitated under programs financed by the Vocational Rehabilitation Act.

   c. Number of Persons to be Served (Status 02-30). Enter the estimated number of persons who will be provided some form of accountable service under the Beneficiary Rehabilitation Program (Trust Fund). For this purpose consider statuses "02" through "30".

   d. Number of Persons to be Rehabilitated. Enter the estimated number of persons who will be vocationally rehabilitated under the Beneficiary Rehabilitation Program (Social Security Trust Fund).

   e. Number of Closures Not Rehabilitated. Enter the estimated number of persons to be served under both the Vocational Rehabilitation Act and the Beneficiary Rehabilitation Program whose cases will be closed not rehabilitated.

   Note: Estimates within "Program Indicators" should reconcile with totals on Line 17, Part V, for each designated fiscal year of the Plan.

3. Priority Service Target Groups: Provision is made here for estimates as to the numbers of persons to be served and rehabilitated within designated Federal priority service target groups for each Fiscal Year included in the Plan. The Federal priority service target groups are: (a) Disabled Public Assistance Recipients; (b) Disabled Public Offenders; (c) Alcoholics; (d) Drug Addicts. In addition, State agencies may at their discretion designate State priority service target groups (lines e and f). The same person may be included in more than one target group if he meets the criteria for more than one.

   In determination of priority target group estimates, consideration should be given to special funds reserved for services to these groups.

Part II. Estimated Expenditures by Program (State and Federal)

This Part of the form obtains information on the amounts of estimated expenditures, as well as the number of persons receiving services, when applicable. Definitions of services are found in Chapter 13, Section 1, of the Vocational Rehabilitation Manual.

A. Basic Support Program (Section 2). All planned expenditures to be made under Section 2 of the Vocational Rehabilitation Act should be included under one of the following classifications:

   1. Administration. Enter the amount of planned expenditures for salaries and other associated expenditures related to policy determination and direction of the State agency program.

   2. Counseling and Placement. Enter the amount of planned expenditures for salaries and other associated expenditures related to counseling and placement of vocational rehabilitated clients.

   3. Services for Individuals. Include under this heading estimated expenditures to the State agencies for individual case services, exclusive of costs for administration or for counseling and placement. Costs may be for services provided at State vocational rehabilitation agency operated facilities, at other facilities, or by other vendors.

      Included within this category estimated expenditures for diagnosis and evaluation; restoration (physical and mental); training; maintenance; services for family members; follow-up services; and other goods and services.

4. Specialized Facilities and Programs

a. Randolph-Sheppard Vending Stand Program. Enter the amount of expenditures planned for the Randolph-Sheppard Vending Stand Program. Included would be those small business enterprises treated in Section 401.72 which are also included under Part 409 of the VR Regulations.

b. Other Small Business Enterprises. Enter the amount of expenditures planned for small business enterprises as treated in Section 401.72 of the VR Regulations. Do not include those expenditures for the Randolph-Sheppard Vending Stand Program, which are shown separately.

c. Construction of Rehabilitation Facilities. Enter the amount of expenditures for the construction of rehabilitation facilities as treated in Section 401.59 of the VR Regulations. Funding is not cumulative and should be reported only for the year in which the funds are to be obligated. An indication should be included in the "Narrative Justification." Enter also, following "Hill-Burton Formula," the appropriate Federal and State percentages that are applicable to the State under the Hospital and Medical Facilities Survey and Construction Act. The percentages should be those currently in effect and should not reflect anticipated changes for subsequent years. In those few instances where the State agency uses a variable grant percentage, explain by footnote.

d. Establishment of Rehabilitation Facilities. Enter the amount of expenditures planned for the establishment of rehabilitation facilities as treated under Section 401.58 of the VR Regulations. Funding is not cumulative and should be reported only for the year in which funds are to be obligated. An indication of the increased capacity derived from these expenditures should be included in the "Narrative Justification.

e. Services and Facilities for Groups of Individuals. Enter the amount of expenditures planned for facilities and services for groups of handicapped individuals as treated under Section 401.60 and 401.75 of the Regulations.

f. Recruitment and Training Services. Enter the amount of expenditures planned for recruitment and training services for new employment opportunities as treated under Section 401.54 of the Regulations.

g. Total. Enter the total amount of Section 2 expenditures for planned specialized facilities and programs. This amount should equal the entries on lines a. through f.

5. Minor Medical Services. Enter the amount of planned expenditures for minor medical services provided to persons referred to the rehabilitation agency from manpower programs administered by the Department of Labor.

6. Total of Basic Support Program (Section 2). Enter the total amount of planned Section 2 expenditures. This amount is equal to the sum of lines 1. through 5.

B. Beneficiary Rehabilitation Program (Trust Funds). All expenditures made from the Social Security Trust Funds for the provision of VR services (and related costs of administration) as provided for in Part 401, Subpart D, of the VR Regulations, should be included under any one of the following classifications:

1. Administration. Enter the amount to be paid from Trust Funds for administration under the program.

2. Counseling and Placement. Enter the amount to be paid from Trust Funds for counseling and placement under the program.

3. Services for Individuals. Enter the estimated amount to be expended for individual services for each Fiscal Year included in Plan.

4. Total Trust Funds. Enter the total estimated expenditures from Trust Funds (Sum of lines B1, 2 and 3).

C. Expansion Programs (Section 4(a)(2)(A). Enter the amount of expenditures made under Section 4(a)(2)(A) through (d) of the VR Act for the Expansion Grant Program (Regulations, Part 403, Subpart A), Contracts with Industry (Regulations, Part 403, Subpart D), New Career Opportunities in VR (Regulations, Part 406, Subpart D), and New Career Opportunities for the Handicapped (Regulations, Part 403, Subpart C).

D. Construction Program (Section 12). Enter the amount of expenditures made under Section 12 of the Act for the construction and staffing of rehabilitation facilities, as defined in Part 404, Subparts B, C, and D, of the Regulations.

E. Facilities Improvement Program (Section 13). Enter the amount of expenditures made under Section 13 of the Act for improvements, technical assistance, or training services projects, as defined in Part 404, Subparts E, F, and H, of the Regulations.

G. Grand Total. Enter the amount of all expenditures made under the VR Act, the sum of lines A.6., B.4., and C. through E.

Part III. Source and Utilization of State Funds to be Made Available for Rehabilitation Services

A. Source of Funds. The information reported on this section of the form is to be entirely State funds, as defined in Section 401.80 of the Regulations.

1. Appropriated Funds, Contributions, and Other State and Local Funds (do not include those earmarked for construction) as listed below:

a. Direct State Appropriations for VR Services. The amount appropriated directly to the State VR agency for the provision of services. Amounts available for construction of rehabilitation facilities should be separately identified (see 3 below) when possible.

b. Allotment From Other State Appropriations. The amount of allotments for rehabilitation purposes which are included in the appropriations for other State programs.

c. Transfers From Other State Appropriations. The amount of allotments which were appropriated for purposes other than rehabilitation and subsequently transferred to the rehabilitation program.

d. Private Contributions From Organizations and Individuals.

1. Provision of VR Services. The amount of contributions from private sources for providing VR services other than construction and establishment.

2. Establishment. The amount of contributions from private sources for the establishment of rehabilitation facilities.

e. Local Public Funds Under Wavier of Statewideness. The amount of funds contributed by jurisdictions within the State for provision of VR services under the wavier of statewideness provision. Funds available from third party funding agreements should not be included under this classification (see line 2. below).

f. Other State Funds. The amount of any other State funds not included in one of the above classifications (see Lines A through E).

2. Available from Third Party Funding Agreements. Enter the amount available from third party funding agreements. Funds provided by a public agency (third party agency) of the State other than the designated VR agency may be made available by certification of eligible expenditures or by transfer from the appropriation of the cooperating agency. Policy concerning third party funding agreements is contained in Chapter II, Section 1, of the Vocational Rehabilitation Manual.

3. Available for Construction from All Sources. Enter all funds earmarked for construction of rehabilitation facilities. This would include all funds (a) appropriated specifically for construction and (b) contributions from private sources for construction. (The current Hill-Burton percentage governs Federal matching.)

4. Total State Funds Available. Enter the total amount of State funds available for utilization by the State agency in accordance with the VR Act. This amount should be the sum of lines 1 through 3. This amount should reconcile with the utilization of funds reported under B.

B. Utilization of Funds. The information reported on this section of the form should include no Federal funds, although Federal matching should be considered in estimating State funds available. Consideration should also be given to the information reported in Part II, "Estimated Expenditures by Program;" and the difference between Parts II and III should equal the amount of Federal funds. References to the Regulations for Part III are the same as those for Part II.

1. Basic Support Program (Section 2)

   a. VR Services Other than Construction. Enter the amount of State funds to be utilized under provisions of Section 2 for purposes other than construction of rehabilitation facilities.

   b. Construction of Facilities. Enter the amount of State funds to be utilized for construction of rehabilitation facilities.

2. Expansion Grant Program (Section 4(a)(2). Enter the estimated amount of State funds to be utilized for programs funded under Section 4(a)(2) of the VR Act.

3. Construction Program (Section 12). Enter the estimated amount of State funds to be utilized for construction of rehabilitation facilities as provided for under Section 12 of the VR Act.

4. Facilities Improvement Program (Section 13). Enter the estimated amount of State funds to be utilized for the Facilities Improvement Program as provided for under Section 13 of the VR Act.

5. Other. Enter the estimated amount of State funds to be utilized for purposes other than as provided for under B1, 2, 3, or 4 above. Explain under "Remarks".

6. Total. Enter the total amount of State funds to be utilized for the rehabilitation program, the sum of lines B1 through B5.

Part IV. Total Personnel Requirements in Man-Years for Sections 2, 4, and Trust Funds

All staff requirements under Sections 2 and 4 of the VR Act and the Social Security Trust Funds program should be reflected in this part of the form. Reporting should be for all State agency personnel whose salaries are subject to Federal matching and any other persons under the supervision and control of the State vocational rehabilitation agency for which matching is claimed. All entries should be rounded to the nearest full man-year. Instructions for calculating man-years are contained in Administrative Service Series Number 69-11, Supplement 1, dated June 2, 1969.

Under the columns headed "State VR Agency" should be all staff, except staff funded by third party agreements. Under the columns headed "Third Party" should be staff financed by third party funding agreements, without regard to the location of staff. Activities for which third party funding is appropriate are defined in Chapter 11 of the Vocational Rehabilitation Manual.

A. Administration. Personnel associated with policy determination and direction should be included under this classification. Classes of personnel in this category may include the following:

1. Professional. Personnel performing functions related to program administration. Included may be medical consultants and specialists, facilities specialists except when employed in State VR agency operated facilities (see line D. below), training specialist, as well as other devoted to overall program rehabilitation.

2. Clerical. Personnel performing clerical functions related to program administration

3. Other. All other personnel involved in program administration, including individuals performing services or custodial duties in space occupied by personnel engaged in administration.

B. Counseling and Placement. Personnel associated with the guidance, counseling, and placement of clients should be included under this classification except for persons in State VR agency operated facilities. In arriving at your planned needs, please consider the following classes of personnel:

1. Supervisory. Supervisory personnel involved with guidance, counseling, and placement functions.

2. Counselors. This classification should include individuals performing counseling, regardless of job title.

   a. General. Counselors who carry a caseload that is not restricted to a specified disability category or other category such as public assistance or institutions.

   b. Specialized. Counselors who carry a caseload that is restricted to a specified disability category or other category such as public assistance or institutions.

3. Other Professional. This classification should include individuals performing counseling and placement functions that have not been previously classified.

   a. Medical. Consultants, ophthalmologists, psychiatrists, or other doctor providing medical advisory services.

   b. Other. Professional employees that have not been previously classified.

4. Technicians and Aides. Persons who contribute to the counseling process by performing subprofessional functions, such as interviewers, aides, placement specialists, and technicians.

5. Clerical. Personnel performing functions related to guidance, counseling, and placement.

6. Other. All other personnel involved in counseling and placement, including individuals performing service or custodial duties in space occupied by personnel engaged in counseling and placement.

C. Services for Individuals. Personnel associated with providing services to individuals should be included under this classification, except for persons in State VR agency operated facilities. In arriving at your planned needs, please consider the following classes of personnel:

1. Professional. Those who provide rehabilitation services other than counseling and placement. Such functions include mobility instruction, teaching, adjustment training, etc.

2. Technicians and Aides. Persons who participated in providing rehabilitation services other than counseling by performing supportive functions, such as readers for the blind, aides, therapists, or technicians.

3. Clerical. Personnel performing functions related to the provision of rehabilitation services other than counseling.

4. Other. All other personnel involved in providing services for individuals, including individuals performing service or custodial duties in space occupied by personnel engaged in providing services to individuals.

D. Staff at State VR Agency Operated Facilities. This classification includes all personnel in State VR agency operated facilities, regardless of function. Classes of personnel in this category may include the following:

1. Administration. Individuals associated with policy determination and direction and the overall administration of the facility.

2. Supervisory. Individuals providing direct-line supervision of professional personnel engaged in providing services to clientele of the facility.

3. Counseling and Placement. Individuals engaged in counseling and placing clientele of the facility.

4. Medical. Doctors on the staff of the facility, including the medical director, staff physicians, psychiatrists, and other specialists.

5. Other Professionals. All other professionals providing services to clients not previously classified, including evaluators, nurses; occupational, recreational; physical; and speech therapists; prosthetists; psychologists; social workers; and teachers.

6. Technicians and Aides. Persons who participated in providing services by performing supportive functions.

7. Clerical. Clerical personnel employed at the facility.

8. Maintenance and Operational. Personnel, professional and non-professional, engaged by the facility, including dietitians, house mothers, janitors, porters, and gardeners.

E. Total Equivalent Man-Years. Enter in equivalent man-years the total of all personnel required under Section 2 and 4 of the VR Act and the Trust Funds Program. This is the sum of A through D.

Part V. Average Cost, Estimated Number of Individuals to be Served and Rehabilitated by Disability Category

The purpose of this Part is to provide data concerning average cost to service clients in the various disability categories in Fiscal Year 1971 and to estimate numbers of persons to be served and rehabilitated in these categories in Fiscal Years 1973, 1974 and 1978.

Major Disabling Conditions included are:

1. Blind
2. Visually Impaired
3. Deaf
4. Hard of Hearing
5. Amputations and Orthopedics
6. Mentally Ill
7. Other Character, Personality and Behavioral Disorders
8. Alcoholism
9. Drug Addiction
10. Mental Retardation
11. Epilepsy
12. Heart Disease
13. Speech Impairments
14. Digestive System Disorders
15. All Other Disabilities

Average Cost to Serve Client - Closed Cases - FY 1971 - Number of Cases in Computation:

For each of the designated disability categories (Lines 1 through 15) indicate the number of cases upon which the average cost was calculated in FY 1971.

Average Cost:

Compute total agency cost of purchased services in each disability category as provided for in item B.1, Part III, Form SRS-RSA-300. Divide the total amount for services to each disability category by the number of cases served. This will be the "average cost" to serve.

Average Cost to Serve Client - All Disabilities:

Compute the total number of cases served in all disability categories (sum of lines 1 through 15 under "Number of Cases in computation"). Divide this amount into the total amount expended by the agency for purchased services. This will be the agency's average cost to serve a client in FY 1971.

Number to be Served - Number to be Rehabilitated:

For each designated Fiscal Year of the Program and Financial Plan and for each Major Disabling Condition, estimate the number to be Served and the Number to be Rehabilitated.

Total:

For each designated Fiscal Year of the Program and Financial Plan, compute the estimated total number to be served and rehabilitated (sum of lines 1 through 15) and enter on line 17. (Totals on Line 17 for Served and Rehabilitated should reconcile with totals included in Part I.2 "Program Indicators" for each designated Fiscal Year of the Plan).

Part VI. Narrative Justification

A. Purpose

The narrative justification of the Program and Financial Plan is of considerable importance to both the State Director and to the Commissioner, Rehabilitation Services Administration. The narrative provides the State Director a forum from which to present an overview of the State's rehabilitation program and to review past accomplishments. It also provides an insight on the present program, goals for the future, problem areas, program trends in the State, and other matters of importance to the State agency.

To the Commissioner, Rehabilitation Services Administration, the narrative provides information of tremendous importance for the determination of nationwide direction of the program, the designation of disability categories and target groups for priority services, the analysis of trends within the program and the general administration of the program.

Anticipated State legislative or administrative action affecting the organizational structure or jurisdiction of the agency should be discribed as well as other anticipated events or activities that will favorably or unfavorably affect program performance.

B. General Instructions

In order that all aspects of program activity may be afforded their respective importance, agencies are requested to write their narratives in a standardized manner as provided in the Discussion Factors.

These elements should be taken into account for each Program Area for which a narrative is prepared. Emphasis should be placed upon significant ongoing or planned activity that could be of interest to the national rehabilitation program.

C. Discussion Factors

Narratives should include all the elements that are applicable to the particular program area being reviewed.

1. Goals and Objectives. For each program area, set forth agency goals that are planned or anticipated to be accomplished. Rationale for the establishment of goals should be described. Goals may include the numbers of people to be served or rehabilitated, specified increases in selected types of referrals, specified amounts for interagency cooperative programs, improved client-staff ratios, etc.

2. Background and Accomplishments. Included here should be any pertinent historical information concerning the particular program area being discussed which might be of any unique, imaginative, or resourceful agency practice that has proven to be especially successful or productive, past accomplishments, etc.

3. Problem Areas. Describe problems that the agency may have encountered in each of the program areas. Problems may include an insufficient number of referrals, shortages of specialized staff or facilities, etc. Agency efforts to overcome or circumbent problems should also be discussed.

4. Planned Actions. Describe possible alternatives and plans of action to assure the accomplishments of established goals and the resolution of problems. Provide information as to when (fiscal year) actions are anticipated and goals are expected to be accomplished.

5. Other Program Aspects. Any other factors affecting program areas should also be described as they relate to effective planning. Included here might possibly be an explanation of agency policy, proposed changes in legislation, etc.

D. Program Areas:

1. Priority Service Target Groups: Narratives should be prepared for each of the priority service target groups included in Part I.3. Planned activity in these areas should be developed with full consideration for reserves of funds specifically set aside to serve these groups. Plans to serve disabled public assistance recipients should be developed jointly with public assistance agencies. Likewise, cooperative agreements with correctional agencies and agencies serving the alcoholic and drug addict should be taken into account when planning priority services to these groups.

2. Disability Categories. Narratives should be prepared for each major disabling condition listed in Part V. (Alcoholism and Drug Addiction covered under "Priority Service Target Groups" need not be repeated).

3. Interagency Cooperative Programs (including cooperative school programs). The narrative justification should include an evaluation of agency involvement in interagency cooperative programs in solving problems of society, such as urban and rural poverty, crime, unemployment, etc. Discussion should include agency program efforts in relation to the Model Cities legislation, Office of Economic Opportunity, Cooperative Area Manpower Planning System (CAMPS), Concentrated Employment Program (CEP), Manpower Development and Training Act (MDTA), Work Incentive Program (WIN), and other Federal and State manpower programs.

4. Program Evaluation. Under this heading State agencies are requested to describe techniques employed to review program efficiency, effectiveness and utilization of resources. Of particular importance are methods and procedures employed for self-evaluation.

5. Rehabilitation Facilities. Describe the role of rehabilitation facilities as they relate to agency goals and objectives established within the Program and Financial Plan. Take into account State capacity in relation to need for various types of facilities.

6. Third Party Funding Programs. Describe the nature of and extent to which the State agency has entered into third party arrangements with other public agencies for program expansion and funding purposes. (Activities for which third party funding arrangements are appropriate are provided in Chapter 11 of the Vocational Rehabilitation Manual.)

7. Staff Development and Training. Discuss the agency's policy in regard to procurement of staff needed to attain goals set forth by the Program and Financial Plan. Describe the on-going in-service training program to assure staff proficiency. Include current and anticipated utilization of rehabilitation aides.

8. Research Utilization. Describe the nature of any current or planned rehabilitation research being conducted under the jurisdiction of the State agency. In addition, please identify areas where additional research could be beneficial to the rehabilitation program.

9. Beneficiary Rehabilitation Program (Trust Funds). Define the role of the Beneficiary Rehabilitation Program (Trust Funds) within the agency program. Describe accomplishments, problems or special staffing and administrative arrangements in the program.

10. Aging Program. Describe agency programs specially geared to meet the rehabilitation needs of older clients (65 years of age and over).

11. Special Concerns Indigenous to Agency Programs. Agencies are requested to report any other program activity that is innovative in nature and could be of value and interest to other agencies. Accomplishments not previously discussed, unique service delivery systems, pending organizational or administrative changes that could greatly influence the rehabilitation program in the State should also be reported.

State _____

PROGRAM AND FINANCIAL PLAN FOR VOCATIONAL REHABILITATION AGENCIES

FORM APPROVED
O.M.B. NO. 83R0260

State of _____ General ( ) Blind ( )

PART I – PROGRAM OBJECTIVES	FY 1973	FY 1974	FY 1978
1. Universe of Eligible Disabled Persons (Provide for Annual incident level of disability less those served in a given year)			
Source and Date of Data: _____	_____	_____	_____
_____			
2. Program Indicators:			
a. Number of persons to be served (status 02-30) (Vocational Rehabilitation Act)	_____	_____	_____
b. Number of persons to be rehabilitated (Vocational Rehabilitation Act)	_____	_____	_____
c. Number of persons to be served (status 02-30) (Beneficiary Rehabilitation Program – Trust Fund)	_____	_____	_____
d. Number of persons to be rehabilitated (Beneficiary Rehabilitation Program – Trust Fund)	_____	_____	_____
e. Number of closures not rehabilitated	_____	_____	_____

3. Priority Service Target Groups:	Served	Rehab.	Served	Rehab.	Served	Rehab.
a. Disabled Public Assistance Recipients						
b. Disabled Public Offenders						
c. Alcoholics						
d. Drug Addicts						
e. _____						
f. _____						

Date _____

Signed _____
Director

897

FORM NO. SRS-RSA-1

State _____

PROGRAM AND FINANCIAL PLAN FOR VOCATIONAL REHABILITATION AGENCIES

FORM APPROVED
O.M.B. NO. 83R0260

PART II – ESTIMATED EXPENDITURES BY PROGRAM (STATE AND FEDERAL)

	FY 73	FY 74	FY 78
	Amount	Amount	Amount
A. BASIC SUPPORT PROGRAM (SECTION 2)			
1. Administration			
2. Counseling and Placement			
3. Services for Individuals			
4. Specialized Facilities and Programs			
a. Randolph-Sheppard Vending Stand Program			
b. Other Small Business Enterprises			
c. Construction of Rehabilitation Facilities			
Hill-Burton Formula Fed. Percentage _____ State Percentage _____			
d. Establishment of Rehabilitation Facilities			
e. Services and Facilities for Groups of Individuals			
f. Recruitment and Training Services			
g. Total			
5. Minor Medical Services			
6. Total of Basic Support Program (Section 2)			
B. BENEFICIARY REHABILITATION PROGRAM (TRUST FUNDS)			
1. Administration			
2. Counseling and Placement			
3. Services for Individuals			
4. Total Trust Funds			
C. EXPANSION PROGRAMS (SECTION 4(a)(2))			
D. CONSTRUCTION PROGRAM (SECTION 12)			
E. FACILITIES IMPROVEMENT PROGRAM (SECTION 13)			
F. GRAND TOTAL			

FORM NO. SRS-RSA-1

State _____

PROGRAM AND FINANCIAL PLAN FOR VOCATIONAL REHABILITATION AGENCIES

FORM APPROVED
O.M.B. NO. 83R0260

PART III – SOURCE AND UTILIZATION OF STATE FUNDS TO BE MADE AVAILABLE FOR REHABILITATION SERVICES

	FY 73 Amount 1/	FY 74 Amount 1/	FY 78 Amount 1/
A. Source of Funds:			
1. Appropriated Funds, Contributions and other State and Local Funds (Excluding Construction Funds)			
2. Available from Third Party Funding Agreements			
3. Available for Construction from all Sources			
4. Total State Funds Available			
B. Utilization of Funds:			
1. Basic Support Program (Section 2)			
a. V.R. Services other than Construction			
b. Construction of Facilities			
2. Expansion Grant Program (Section 4(a)(2)			
3. Construction Program (Section 12)			
4. Facilities Improvement Program (Section 13)			
5. Other (Explain under Remarks)			
6. Total (Should reconcile with total State Funds available in A.4 above)			

1/ In Thousands (000) of Dollars)

Remarks:

699

FORM NO. SRS-RSA-1

State _____

PROGRAM AND FINANCIAL PLAN FOR VOCATIONAL REHABILITATION AGENCIES

FORM APPROVED
O.M.B. NO. 83R0260

State of _____ General ( ) Blind ( )

PART IV – TOTAL PERSONNEL REQUIREMENTS IN MAN-YEARS FOR SECTIONS 2, 4, AND TRUST FUNDS 1/

	FY 73		FY 74		FY 78	
	State VR Agency 2/	Third Party	State VR Agency 2/	Third Party	State VR Agency 2/	Third Party
A. Administration						
B. Counseling and Placement						
C. Services for Individuals						
D. Staff at State VR Agency Operated Facilities						
E. TOTAL EQUIVALENT MAN-YEARS						

1/ Round to nearest full man-year.
2/ Does not include third party funding agreements.

900

PROGRAM AND FINANCIAL PLAN FOR VOCATIONAL REHABILITATION AGENCIES

FORM APPROVED
O.M.B. NO. 83R0260

PART V – AVERAGE COST, ESTIMATED NUMBER OF INDIVIDUALS TO BE SERVED AND REHABILITATED BY DISABILITY CATEGORY

Major Disabling Condition	Average Cost to Serve Client – Closed Cases – FY 1971*		FY 1973		FY 1974		FY 1978	
	No. of Cases in Computation	Average Cost	No. to be Served	No. to be Rehab.	No. to be Served	No. to be Rehab.	No. to be Served	No. to be Rehab.
1. Blind								
2. Visually Impaired								
3. Deaf								
4. Hard of Hearing								
5. Amputations & Orthopedics								
6. Mentally Ill								
7. Other character, personality and behavioral disorders								
8. Alcoholism								
9. Drug Addiction								
10. Mental Retardation								
11. Epilepsy								
12. Heart Disease								
13. Speech Impairments								
14. Digestive System Disorders								
15. All other Disabilities								
16. Average cost to serve clients – all disabilities 1/								
17. Total								

* Average cost will be obtained by averaging item B.1, Part III, Form SRS-RSA-300

1/ Clients closed either rehabilitated or not rehabilitated.

901

PROGRAM AND FINANCIAL PLAN FOR VOCATIONAL REHABILITATION AGENCIES

FORM APPROVED
O.M.B. NO. 83R0260

PART VI – NARRATIVE JUSTIFICATION

In completion of the narrative justification, the "Discussion Factors" should be considered for each of the "Problem Area for which a narrative statement is being prepared.

Discussion Factors:

1. Goals and Objectives
2. Background and Accomplishments
3. Problem Areas
4. Planned Actions
5. Other Problem Aspects

Program Areas:

1. Priority Service Target Groups (each to be reviewed separately. Services for disabled public assistance recipients should be developed jointly with public assistance agencies).
2. Disability Categories (each to be reviewed separately).
3. Interagency Cooperative Program (including cooperative school programs).
4. Program Evaluacion (describe evaluation techniques employed by agency).
5. Rehabilitation Facilities (indicate State capacity in various types of facilities in relation to needs.
6. Third Party Funding Programs.
7. Staff Development and Training.
8. Research Utilization (indicate areas where rehabilitation research is needed).
9. Beneficiary Rehabilitation Program (Trust Funds)
10. Aging Program.
11. Special concerns indigenous to agency programs.

VT 018 069

VT 018 069
ANNUAL REPORT DEPARTMENT OF AGRICULTURAL EDUCATION, 1971-1972.

OHIO STATE UNIV., COLUMBUS. DEPT. OF AGRICULTURAL EDUCATION.; OHIO STATE DEPT. OF EDUCATION, COLUMBUS. DIV. OF VOCATIONAL EDUCATION.
MF AVAILABLE IN VT-ERIC SET.
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IDENTIFIERS - *OHIO STATE UNIVERSITY

ABSTRACT - A REVIEW OF THE ACCOMPLISHMENTS AND ACTIVITIES ENGAGED IN BY THE OHIO STATE UNIVERSITY DEPARTMENT OF AGRICULTURE, THIS DOCUMENT REPORTS IN ADDITION TO THE STUDENT AND FACULTY ENROLLMENT AND GRADUATION HIGHLIGHTS, RESEARCH EFFORTS, CURRICULUM CHANGES, SOURCES OF FINANCIAL ASSISTANCE, SERVICES AVAILABLE, AND PROGRAMS INITIATED FOR THE UPGRADING OF NEW AND EXPERIENCED TEACHERS. TABLES LISTING THE NAMES OF STAFF AND FACULTY MEMBERS ARE INCLUDED. (SN)

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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Annual Report 1971-1972 Department of Agricultural Education

Issued by

DEPARTMENT OF AGRICULTURAL EDUCATION
COLLEGE OF AGRICULTURE AND HOME ECONOMICS
THE OHIO STATE UNIVERSITY

in cooperation with

DIVISION OF VOCATIONAL EDUCATION
OHIO DEPARTMENT OF EDUCATION

October, 1972

ED088065

FOREWORD

This is the annual report of the Department of Agricultural Education for 1971-72. The information reported herein serves somewhat as a history and as a basis for evaluation. It was prepared by the staff for the purpose of making further improvement in the Department.

Members of the agricultural education staff recognize and appreciate the significant contribution of other individuals and groups particularly the supervisors of vocational agriculture and other personnel of the State Department of Education, the administration and faculty of the College of Agriculture and Home Economics and the College of Education, personnel of the Cooperative Extension Service, and the Ohio Agricultural Research and Development Center.

Ralph E. Bender, Chairman

SOME HIGHLIGHTS

--Sixty-four students were qualified for certification to teach vocational agriculture; 40 were placed in such positions. The supply did not meet the demand even though an expanded program of recruitment has been conducted including as a new procedure the use of 10 agricultural education majors who participated in a series of FFA officer or training programs throughout the state. Nearly 1,500 students attended these meetings.

--The number of declared majors ranged from 132 to 156. This does not include freshmen and sophomores enrolled in University College who will be pursuing an agricultural education program.

--New certification standards were in effect as of January 1, 1972. They involved the preparing of prospective teachers in specialized areas of horticulture, agricultural business, agricultural equipment, food processing, agricultural resources, and forestry in addition to production agriculture.

--Changes within the agricultural education courses included the provision of earlier professional experiences. More observation and participation experience has been included in Agricultural Education 200 and the "380" series of experience courses have been changed to the 200 level in order to attract and serve sophomores. Through special consideration of the Dean's office, Agricultural Education 200 was offered for third quarter freshmen.

--Sixty-two students participated in student teaching that was provided in 29 schools and 24 County Extension centers.

--Nine undergraduates received Agricultural Education Scholarships. A new $500 scholarship provided by the Ohio Grain, Feed and Fertilizer Dealers was established.

--The total undergraduate and graduate student registration in agricultural education courses was 1,307 as compared to 1,178 a year earlier.

--265 students from 12 states and Taiwan majoring in agricultural education were enrolled in programs beyond the Bachelor's degree. Much of this enrollment was in a program of three-week workshops during the summer quarter. Off-campus courses were offered during the autumn and spring quarters.

--83 new and returning teachers of vocational agriculture were supervised by the staff in agricultural education in cooperation with Assistant State Supervisors.

--A planned program was developed and approved for the certification of personnel interested in becoming local supervisors of vocational agriculture.

--Seventeen students received the Ph.D. degree and 30 students were recipients of Master's degrees.

--A new graduate course, Analysis and Interpretation, was developed and approved for offering autumn quarter 1972.

--Research was accomplished primarily through the Ph.D. degree program including such areas of study as continuing education for technical college graduates, manpower needs in environmental management, characteristics of disadvantaged rural youth, change orientation of vocational teachers, guidelines for evaluating activities conducted by State Advisory Councils, perceived training needs of urban Extension agents, and role of area Extension agents.

--The materials published by the Ohio Agricultural Education Curriculum Materials Service during 1971-72 included 38 new manuals, 4 slide series, and one set of transparencies. In addition, hundreds of materials were made available as identified through three catalogs that are issued by the Service.

--A $260,000 USOE grant was approved for the period June 15, 1972 to June 15, 1974 for the preparation of curriculum guides pertaining to career education in agricultural business, natural resources, and environmental improvement. The project, which was planned by Dr. Harlan Ridenour, is being directed by Roger D. Roediger and includes materials in career education at various levels K-12 grades.

--Materials are being developed which deal with a cooperative way of doing business by J. H. Lintner as a project which has been funded by the Martha Holden Jennings Foundation and the Ohio Council of Farmer Cooperatives. This grant was for $20,000.

--The Ohio Farm and Home Electrification Council is contributing $1,500 for the development of materials for farm and home electrification by the Curriculum Materials Service.

--A project "Development and Dissemination of Courses of Study and Instructional Materials for Environmental Science and Protection Programs" which was started January 1, 1971 was completed during the year. The 18-month project was funded by a $34,922.50 grant from the Division of Vocational Education, Ohio Department of Education.

--Biennial plans of the department of 1973-75 and 1975-77 including improvements and new programs were submitted to the College. The programs involved air conditioning, research and development, individualized instruction, a new communications course, preparation of specialized agricultural education personnel, youth development, curriculum development and instructional materials, and preparation of personnel for agricultural technician programs.

ANNUAL REPORT

1971-1972

The Department of Agricultural Education has responsibility for the initial preparation and continuing professional development of personnel in agricultural education. In cooperation with the Division of Vocational Education of the State Department of Education and as a part of the College of Agriculture and Home Economics of The Ohio State University, the department attempts to serve many clientele in agricultural education including teachers of agriculture in secondary schools, area vocational centers, and post-secondary institutions; Cooperative Extension personnel at the county, area, and state levels; personnel in vocational education and Cooperative Extension in administrative and supervisory positions; and other individuals needing specialized competencies in agricultural education.

The department, which is housed in the Agricultural Administration Building, comprises 13 faculty members, 7 of whom are part-time and six secretaries. Forty-six others with ranks of instructor or higher, including emeriti,have appointments in the department.

Undergraduate Program

At the end of the Spring Quarter the Department of Agricultural Education had 156 declared majors, which is a decrease from the last several years as may be noted in Table 1. It is difficult to attach causes for the decrease in enrollment. The change in the draft laws which no longer gives exemptions for teachers may have had some negative influence on enrollment. On the positive side, the employment opportunities this past year have been favorable for vocational agriculture teaching in comparison to other fields. This advantage has seemingly not influenced undergraduates to change their major or to encourage noncommitted students to declare their major in agricultural education. However, many students from other departments are taking courses in agricultural education to become certified to teach.

The number of graduates qualifying to teach vocational agriculture in the College of Agriculture and Home Economics is shown in Table 2. There were 7 fewer qualifying in the past year than in the two years previous. Another item to note is that 13 non-majors were qualified to teach, which is five less than the year before, however, high compared to 1967-68 and 1968-69. Counselors in the Department report that during the past year many students from other departments sought information regarding requirements for teaching. This interest may

reflect changes of major to agricultural education that could increase department enrollment in the future.

TABLE 1

NUMBER OF DECLARED MAJORS IN AGRICULTURAL EDUCATION

Quarter	1967-68	1968-69	1969-70*	1970-71*	1971-72*
Autumn	166	191	166	164	132
Winter	171	199	177	165	130
Spring	190	207	181	172	156

*Freshmen and some sophomores enrolled in University College.

TABLE 2

NUMBER QUALIFYING TO TEACH VOCATIONAL AGRICULTURE

Item	1967-68	1968-69	1969-70	1970-71	1971-72
Regular Graduates	51	62	58	54	51
Others	5	9	14	18	13
TOTAL	56	71	72	72	64

Course Enrollment

Enrollment in courses for agricultural education in 1971-72 and each of the four years previous is listed in Table 3. The undergraduate courses begin with 200 and include 581, 582, and 583, although

TABLE 3

ENROLLMENT IN AGRICULTURAL EDUCATION COURSES

Course Number	Number Enrolled				
	1967-68	1968-69	1969-70	1970-71	1971-72
200	122	134	133	121	154
230	83	72	81	72	65
380.01	51	75	56	35	44
380.02			1	2	3
380.03			36	39	22
420	15	12	8	17	30
581	56	64	73	73	62
582	56	64	73	73	62
583	56	64	73	73	62
621	16	13	19	24	31
622	13	3	14	3	21
631	25	33	49	33	39
640	29	20	34	12	19
641	15	17	20	16	10
642	13	13	11	43	34
684		28	52	56	
684.10					45
684.20					2
684.30					1
684.40					14
693	103	74	57	71	89
743		4		11	2
744	3	4	7	4	2
770	18	12	12	11	9
790	70	47	21		
790.12				23	17
790.15					10
790.16					16
790.20					22
790.23				14	15
790.25				12	4
794		8	22		34
795	44	41	31		
795.01				14	16
795.02				12	
795.03				40	19
795.04				19	
795.05				34	14
795.06					19
810		17	16	41	32
811	20	25	22	10	26
812	10	12	14	7	5
823	34	36	36	13	13
885	25	28	32	28	52
886		21	21	18	55
889	5	2	6	5	7
995			13	17	12
999	47	61	65	77	54

advanced undergraduates may enroll in courses beginning with 621 and including 693. However, very few undergraduates are enrolled in such courses.

It may be observed that enrollment in Agricultural Education 200 has increased and in 230 it has slightly decreased. Since 230 is primarily a junior-senior course, it is not likely that the effect of the increased enrollment in 200 will show up in 230 until 1972-73 or 1973-74. Enrollments in 380.01, 380.02, and 380.03, undergraduate experience courses, are slightly lower than for the three years previous but they, along with Agricultural Education 230, are likely to have increases in enrollment next year. It may be observed that enrollment in Agricultural Education 581, 582, and 583 is quite similar to enrollment in 230. This is what we would expect because students take 230 just previous to student teaching. As may be observed the overall numbers of undergraduate students enrolled in 1971-72 are about the same for the past two years. The indication of supply of graduates for teaching is the number of completions in student teaching and as may be observed this number is 11 less than the year before.

The outlook for graduates in 1972-73 may be influenced somewhat in the enrollment in Agricultural Education 200 and 230. Next year it would be conceivably more than the 64 completing in 1971-72. Factors altering the final outcome for next year would be an increased number of students transferring to the department from other departments particularly in their senior year, and the number of returnees with Bachelor's Degrees needing two or three quarters of course work for certification.

Recruitment

An expanded program of teacher recruitment was initiated by The Ohio Recruitment Commission for Agricultural Education, including vocational agriculture teachers, College administration and department staff members, under the advisorship of Ralph Woodin.

This year, each beginning teacher was provided a kit of recruitment materials. A letter was sent to all agricultural teachers in January suggesting increased effort be given to recruitment of teachers. The topic "Careers in Teaching" was added to the FFA Extemporaneous Speaking Contest during the 1972 FFA Camp program.

Ten agricultural education majors participated in ten officer training meetings throughout the state by presenting a 20 minute narrated slide show relative to the need for teachers and jobs available in agricultural education. There were nearly 1,500 students in the total audience.

A special horticultural recruitment program to acquaint students in that department with opportunities in teaching vocational horticulture was conducted by Woodin, Boucher and James Utzinger,Extension Horticulturalist.

Recruitment exhibits were prepared and placed at The Ohio State Fair, Farm Science Review and the Ohio FFA Convention.

Twenty states having a surplus of agricultural teachers were contacted about opportunities in Ohio for teaching. Thirty-eight persons indicated an interest in teaching in Ohio.

Approximately 800 prospective students attended the two College career days. Vocational agriculture teachers supported the College activities by bringing students to campus for Career Day as well as Youth Science Day.

Recruitment receives high priority as a department activity. Nationally, 120 departments were closed last year due to a shortage of teachers. Woodin reported only 49% of the agricultural education majors in the United States are teaching compared to 60% in Ohio.

Student Financial Assistance

Students in agricultural education are eligible for the financial assistance made available to all students of The Ohio State University. However, there are three special funds for majors in the department: Agricultural Education Scholarships, Lester B. Harner Scholarships, and the Landmark Agricultural Education Scholarship which provides $300 to one student for one year.

Unfortunately, the Processed Limestone Association discontinued their scholarship of $400; however, during the year the Ohio Grain, Feed and Fertilizer Dealers established a scholarship for agricultural education majors which provides $500 to one student for one year.

In 1971-72 the following undergraduates received scholarships: Harner Scholarships: Tom Rosenbeck, St. Henry; Jeff Johnson, Bellevue; David Moulton, Ravenna; Mark Gebhart, Lewisburg; and Doyle Stevens, Norwalk; Landmark Scholarship: Don Breece, Delaware; Agricultural Education Scholarships: Ron DeLong, Van Wert; Roger Greenawalt, Beloit; and Russel Sword, Wellington.

Curriculum and Course Changes

Curriculum changes were made in the program for teacher certification in agriculture to meet the requirements for seven specialties.

Committees were appointed for these specialties and their curriculum proposals, after some revisions, were approved by the joint staff and the State Department of Certification. Occupational competence to the extent of one year of practical experience or six months of directed experience is required for certification. Since 85% of the students seeking certification in the specialty area "production" are farm reared, they have the necessary farm experience and so are not affected by the 1972 certification standards. However, with the other specialties more attention will need to be given in counseling students so that they are assured of having the prerequisite practical experience for certification. During 1972, a committee working with personnel in the Dean's Office began planning programs with students so that they could secure directed work experience including supervision with University credit.

The program for certification in production agriculture was not drastically changed from the years past except that economic entomology or plant pathology were added to the required list and Genetics 140 or 314 encouraged.

The curriculum for agri-business is in the process of revision due primarily to the changes being made in courses in agricultural economics such as the addition of management of small business and record keeping for agri-businesses that were previously secured from courses in the College of Administrative Science. Even though approval was also granted for the curriculum submitted in industrial equipment, agricultural resources, forestry and horticulture, it is very likely that during the coming year revisions are in order for these specialty areas.

Programmed instruction for both Agricultural Education 200 and 230 introduced in 1970-71 and carried on during the past year is being expanded for 1972-73. Micro-teaching utilizing the video-tape machine has been found most helpful in the courses 200 and 230. The machine is also being used extensively in other courses in agricultural education.

During the year Agricultural Education 380.01, 380.02, and 380.03 were lowered to the 200 level and have been approved as 280.01, 280.02, and 280.03. The staff is generally agreed that providing experience early in the undergraduate college career is important and are encouraging students between their freshman-sophomore year as well as between their sophomore-junior and junior-senior years to enroll in 280.01, 280.02, or 280.03. The courses 280.01 and 280.03 give particular emphasis to "September Experience" when high schools are in session and previous to the beginning of the Autumn Quarter at the University. Agricultural Education 230 was moved to 330 since its enrollment consists of juniors and seniors and so should not be on the sophomore and 200 level. Through special consideration of the Dean's Office, Agricultural Education 200 may be scheduled by third quarter freshmen.

The staff recognizes that undergraduate courses are designed to assist students to make a successful entry into teaching but that additional professional preparation is required beyond the Bachelor's Degree if they are to approach optimal proficiency in the field. Thus, it becomes necessary for a teacher to enroll in post-graduate work, hopefully in programs earning the Master's or Ph.D. Degrees. The incentives for graduate work including increases in salary make advanced degrees almost a necessity if a teacher is to continue in the profession. The staff encourages students to be prepared for entry into the Graduate School. Students whose undergraduate grade point hour is below 2.7 are asked to take the Graduate Record Examination so that they might qualify or otherwise learn what they need to do for admission to the Graduate School. During the year 25 graduates from the department were admitted to the Graduate School.

Departmental Field Experience Program

During the past year, 62 students were enrolled for student teaching. They received field experience in 29 cooperating centers in agricultural education and 24 county extension centers as reported in Tables 4 and 5. Twelve more cooperating centers were used for other field experience. Ten undergraduates completed field experience in employment positions, and 65 undergraduates were placed for field experience programs in Agricultural Education 380.01 and 380.03. Two students were placed for special field experience in Extension, Agricultural Education 380.02.

Continued in this year's program in many instances was the innovation of assigning a student teacher to a cooperating school and to an extension center in the same county. Coordination of learning experiences by the extension agent and the agriculture teacher provided the student teacher with timely and worthwhile activities throughout the quarter. Cooperating teachers' and agents' meetings were held at the beginning of the quarter rather than at the end. At these meetings the agents and teachers identified objectives for the quarter and discussed plans for cooperating the total experience program. Final evaluation of the student teacher by the cooperating agent and teacher was accomplished during a visit by University personnel.

Fifty student teachers were placed in 24 cooperating centers for extension experiences as a part of student teaching. Seminars were held to prepare the student teachers for the experiences in which they engaged during their extension field experience. Seminar topics were area extension programs, extension program development, work with

TABLE 4

COOPERATING SCHOOLS AND THE QUARTERS THEY HAD TRAINEES
IN STUDENT TEACHING AND OTHER FIELD EXPERIENCE

School	380.01	380.03	Student Teaching		
			Autumn	Winter	Spring
Adena		1			
Ansonia		1			
Big Walnut	2	2		2	1
Bluffton	1		1		
Buckeye Valley	1				2
Cardington-Lincoln	2		1		
Carrollton	1			1	
Clear Fork Valley			1		
Cloverleaf	1				
Clyde		1			
Eastland AVC	1		1		
Crestview	1		1		
Elgin	1				1
Fairfield Union	1			1	
Fredericktown	2		2		
Frontier			2	2	
Greene Co. AVC	1				
Greenville	1				
Hardin Northern					2
Jonathan Alder	1		1	2	1
Lincolnview			1		
Loudonville					2
Madison Plains	2		2		2
Marlington		1			
Marysville		1	1		2
Miami Trace					1
Muskingum Co. AVC					1
North Union	2			2	1
Northmor			1		
Northwestern Clark	1			1	1
Oak Harbor				1	
Perkins	1				
Ridgedale		1			
Southwest Licking	1	1			1
Spencerville	1		1		
Strongsville		1			
Tinora		1			1
Vanguard AVC		1			
Wayne Co. AVC	1	1			1
West Branch		1			
Westerville	4		1		3
Special Assignment	7		7	2	1
Other	7	7			
TOTAL	44	21	24	14	24

TABLE 5

STUDENT TEACHING COOPERATING COUNTIES
AND THE QUARTERS THEY HAD TRAINEES

County	380.02	Number of Trainees, Student Teaching		
		Autumn	Winter	Spring
Allen		2		
Ashland				2
Clark			1	
Columbiana			1	
Defiance				1
Erie				1
Franklin				2
Fairfield	1	2	1	2
Hancock				2
Hardin			2	
Knox		2		
Licking			2	1
Madison		2		2
Mahoning				1
Marion				1
Miami				1
Morrow		2		2
Ottawa			1	
Pickaway			2	1
Richland		1		
Trumbull	1			
Union		2		2
Van Wert		2		
Wayne				1
Washington		1	2	
TOTAL	2	16	12	22

agricultural related agencies, socio-economic aspects related to community educational programs, and relevant issues facing extension in the future.

Visitations by University personnel were made to each of the cooperating school and extension centers and consultations were held with student teachers and the cooperating instructor. Comments by student teachers indicated a very favorable reaction to the instructional

efforts provided by school and extension faculty serving as cooperating instructors. They regarded the extension experience as a part of their overall student teaching and one of the contributing factors to their understanding more about the community and the educational programs therein.

During seminars held concurrently with student teaching attention was given to concerns such as planning for instruction, providing for student occupational experience, the organization of youth leadership programs, organizing post-secondary education, techniques of instruction and the evaluation of teaching and student performance.

Through the continued use of new video equipment, it was possible to have closed circuit TV observation of teaching during a seminar. Student teachers were able to observe and discuss the teaching of a high school class by one of their group, without the intrusion upon the class.

While much benefit is gained from the seminars where student teachers meet and discuss common problems, there is growing need that the number of such meetings be reduced because of the wider placement of trainees to provide experience in the subject area in which they are certified to teach. Beginning, mid-term, and closing seminars may be continued so long as students are able to travel the required distance.

Student teachers were reimbursed ten cents per mile for travel to seminars and farm-home and occupational program visits. They received mileage from agricultural extension for activities during their assignment to a county office. Mileage per student teacher varies depending upon the distance the trainee travels to seminar locations. The placement of student teachers to teach in specialized programs increases the mileage used in attending seminars.

During the 1971-72 year, 50 student teachers drove a total of 15,108 miles in vocational agriculture. The cost was $1,510.80 with an average of $30.22 per trainee. A total of 9,342 miles were driven in extension activities at a cost of $934.20 and an average of $25.95 per trainee. This is approximately the same as it has been in previous years.

Agricultural Education Society

The undergraduate majors who are members of the Agricultural Education Society plan and conduct with their advisor, Willard Wolf, a program of activities to develop professional competence through experiences that are not generally provided in course work. The program emphasizes the development of competence in leadership by member participation in such roles whether in meetings of the society, committee

functions, or in cooperative undertakings with other students in the University and College.

Members engage in forums and symposiums, conduct social and educational meetings, plan presentations, prepare exhibits, and maintain a decorum and appearance befitting the profession.

The society meets regularly on the second and fourth Tuesdays of the month with meetings starting at 7:00 p.m. and ending about 8:30 p.m. Included is a business session, an educational program, and time for socializing and refreshments.

The society sponsors a steak fry, a faculty-student get together, a Christmas party with students at the Columbus State Institute (school for mentally retarded) during the Autumn Quarter; a banquet, exchange with an Agricultural Education Society (Vermont and Penn State in 1972) during the Winter Quarter; a recruitment luncheon, a lunchstand to feed 2,000 plus FFA members attending the State Judging Contests, and a leadership training weekend at Camp Muskingum during the Spring Quarter. This year instead of the usual recruitment luncheon, members made trips to the officer training meetings in each district and gave slide presentations and talks on recruitment.

The society members prepare a printed yearly program of activities including roster of officers, officer and faculty editorials, calendar of events, monthly activities, duties and responsibilities of officers, goals with ways and means for eight major activities, budget, and constitution. A scrapbook is maintained and kept in the departmental reception room. The society prepares a quarterly publication "The Townshend Educator" featuring major articles associated with the profession, current issues and problems, timely announcements, reports of society activities, and personal items.

Conflicts with class sessions, work schedules, and other curricular and extra-curricular activities affect member participation in the program of the society. However, compared with other departmental organizations, the AES is recognized as doing well. The attendance at the regular meetings this past year ranged from 20 to 100. The banquet and steak fry each attracted in excess of 200 including 100 members. The bi-monthly executive meetings held on the first and third Tuesday of each month usually have 15 or more in attendance.

Students in agricultural education regard the activities of the society as worthwhile. They conduct their activities in a professional manner. Their performance and participation indicate their regard for this part of their professional pre-service education.

This year, for the first time, girls were permitted to become members of the society.

Placement

A total of 64 students were certified to teach vocational agriculture. Of this number, 51 were regularly qualified with the remainder being graduates of other departments or returning for special training. Of the 64 certified, 40 were placed as teachers of vocational agriculture, 1 in Extension, and 3 continued in their educational pursuits through the Graduate School. As may be noted in Table 6, 20 were classified in other related fields in education and agriculture or inducted into the service.

TABLE 6

NUMBER OF GRADUATES TRAINED AND PLACED
IN VARIOUS OCCUPATIONS FOR A SELECT NUMBER OF YEARS

Year	Number of Men Trained	Number Placed			Other, Inc. Armed Services
		Vocational Agriculture	Extension	Graduate School	
1971-72	64	40	1	3	20
1970-71	72	41	3	2	26
1969-70	72	39	3	4	26
1968-69	71	45	2	4	20
1967-68	56	37	0	4	15
1966-67	58	35	5	4	14
1965-66	56	36	1	3	16
1964-65	40	33	1	2	5
1963-64	37	24	1	1	8
1962-63	34	21	2	2	9
1961-62	44	22	3	5	14
1960-61	54	24	11	4	15
1959-60	46	20	6	2	18
1958-59	69	35	4	10	20
1957-58	55	30	9	4	12
1956-57	54	25	4	5	20
1955-56	42	32	5	2	3
1954-55	29	20	1	0	8
1953-54	29	15	3	1	10
1952-53	32	18	2	3	9
1951-52	46	35	2	2	7

Graduate Program

A total of 265 students participated in the programs beyond the Bachelor's Degree provided by the Department of Agricultural Education.

Many of these students were pursuing the Master's Degree. As observed in Table 7 the group was comprised of 155 teachers of agriculture, 34 Extension persons and 76 others. Students from 12 states and Taiwan were enrolled in the graduate program in addition to those from Ohio. The enrollment data as reported by the Graduate School for the four quarters are reported in Table 8.

TABLE 7

ENROLLMENT OF OHIO TEACHERS OF VOCATIONAL AGRICULTURE AND OTHERS MAJORING IN AGRICULTURAL EDUCATION IN PROGRAMS BEYOND THE B.SC. DEGREE

	Enrollment			
Year	Ohio Teachers	Extension Personnel	Others	Total
1971-72	155	34	76	265
1970-71	126	41	68	235
1969-70	104	24	55	183
1968-69	89	18	63	170
1967-68	78	28	53	159
1966-67	92	14	49	155
1965-66	99	29	38	166
1964-65	101	28	36	165
1963-64	107	34	40	181
1962-63	91	38	39	168
1961-62	96	37	36	169
1960-61	102	40	28	170
1959-60	101	45	26	172
1958-59	100	0	88	188
1957-58	102	0	70	172
1956-57	101	0	34	135
1955-56	121	0	27	148
1954-55	93	0	34	127
1953-54	114	0	27	141
1952-53	93	0	27	120
1951-52	80	0	29	109
1950-51	76	0	36	106
1949-50	88	0	14	102
1948-49	76	0	16	92
1947-48	58	0	11	69

TABLE 8

GRADUATE SCHOOL ENROLLMENT IN AGRICULTURAL EDUCATION
AS REPORTED BY GRADUATE SCHOOL

Quarter	Masters	Ph.D.*	Total
Summer, 1971	74	37	111
Autumn, 1971	29	26	55
Winter, 1972	35	29	64
Spring, 1972	54	29	83

*Board of Regents Classification: the rank is Ph.D. if the student holds a Master's Degree or has earned more than 50 hours of graduate credit.

During the year 30 Master's Degrees and 17 Ph.D. Degrees were awarded. Compared to last year, this represents a significant increase in the Master's Degree program; however, there were two less than the record number of Ph.D.'s in the year previous.

Departmental offerings on campus included Agricultural Education 622, 641, 795.01, 795.03, 795.05, 810 and 811 in the Autumn Quarter. During the Winter Quarter the graduate offerings included Agricultural Education 631, 794, 795.06, 823 and 885. Spring Quarter courses were 640, 641, 642, 770, 795.03 and 886. During each quarter special problems and research were available. Separate sections in 811 and 823 were conducted for extension personnel.

The off-campus offerings during the year for teachers included Agricultural Education 744, Practicum in Teaching Farm Business Planning; Agricultural Education 622, Continuing Education in Agriculture; Agricultural Education 642, Youth Organizations; Agricultural Education 743, Practicum in Teaching Agricultural Mechanics; and Agricultural Education 640, Instructional Media in Teaching Agriculture. The courses in adult education, occupational experience and youth organizations were extended beyond the quarter. For example, adult education and occupational experience courses were started during the autumn quarter but were not completed until early in the spring quarter. This was done to accommodate the teacher of agriculture in not having so many meetings concentrated within a quarter. Also it was able to adapt the course offerings more nearly to the developments in the department.

Agricultural Education 795.03, Leadership Development, was conducted for extension agents and teachers in the Washington Court House area

during the Autumn Quarter. Another special program for 30 extension agents was available for a three week period in September. The course offerings included Agricultural Education 795.06, Communications and Agricultural Education 794, Camp Program Development.

A total of 176 teachers of vocational agriculture participated in this year's courses and workshops which were conducted during the last three weeks in June. Areas of special courses included agronomy - crop production, animal breeding and genetics, agricultural mechanics, pollution control, and environmental studies. Agricultural education offerings were teaching materials, methods, curriculum planning, research methods, farm business planning and analysis, agricultural business and supplies and horticulture. Four intern programs for agribusiness, agricultural equipment, agricultural resources and horticulture were provided.

Dr. Charles Drawbaugh, Chairman of the Department of Vocational Education at Rutgers University was the graduate lecturer during the spring quarter. He spoke to approximately 50 graduate students and faculty concerning "Adapting of the Program of Vocational Agriculture to an Industrial State."

A number of brown bagger luncheons for graduate students and faculty were planned by the graduate students. These luncheons were informal in nature and featured for the most part a particular state or country reported by a graduate student. Also there were some brown baggers of graduate students with their advisor. A reception for all graduate students and wives was again held during the early part of the autumn quarter.

Research

A new course on Analysis and Interpretation of Data (Agricultural Education 887) was developed and approved. The course which resulted from a graduate seminar offered the past two years will be offered for the first time during the autumn quarter, 1972. The course is designed for Ph.D. candidates who have completed at least one year of graduate study, including at least one course in statistics. The course deals with the application and interpretation of statistical techniques, including the use of the computer, to research in vocational-technical and extension education. Warmbrod and Cunningham will teach the course.

The study of currently enrolled students and graduates of post-secondary technical agriculture programs in Ohio was continued during the year. This OARDC funded project is directed by Bender; James Cummins is the graduate research associate assigned to the project. The following report of the project was issued during the year:

Cummins, James E. and Ralph E. Bender. "Agricultural Technician Education in Ohio -- 1970-71." April 1972.

The research phase of the project on "Development and Dissemination of Courses of Study and Instructional Materials for Environmental Science and Protection Programs" was completed during 1971-72. Ridenour directs the project which is funded by the Ohio Department of Education. Warmbrod was the consultant for the research phase of the project which was designed to identify and estimate manpower needs in environmental protection occupations and to determine the competencies required for entry into these occupations. Graduate research associates completing the research phase of the project were John Hillison, David Howell, and William Farrington. The research phase of the project is reported in the following publications:

William S. Farrington and J. Robert Warmbrod. "Manpower Needs in Environmental Management Occupations in Industrial Firms in Ohio." June 1972.

John H. Hillison and J. Robert Warmbrod. "Manpower Needs in Environmental Management." July 1972.

The research project "The Influence of Instruction in Agriculture in Grades 9 and 10 on Students' Subsequent Educational and Occupational Performance" was begun during 1971-72. The project is staffed by a graduate research associate position supported by funds allocated to the Department by the Agricultural Education Service, Ohio Department of Education. Arthur Neavill is the research associate assigned to the project; Warmbrod directs the project. The first year of the project was devoted to the development of instruments and techniques for conducting a criterion-referenced assessment of ninth- and tenth-grade instructional programs in agriculture. Another graduate research associate position supported by funds allocated to the Department by the Agricultural Education Service of the Ohio Department of Education was used to staff the project on "Follow-Up of Graduates of Vocational Horticulture Programs in Ohio." Kenneth Parker is the research associate assigned to the project. Woodin directed the project.

During 1971-72, the following publications, in addition to those listed previously, were issued in the Department's "Research Series in Agricultural Education."

Iverson, Maynard J. and Ralph E. Bender. "Guidelines for the Development of Student Organizations Associated with Agricultural Programs at Two-Year, Post-Secondary Educational Institutions in the United States." August 1971.

Miller, James R. and Robert W. McCormick. "A Theoretical Model to Improve the Extension Education Outreach of The Ohio State University; Utilizing Marketing, Behavioral, Business, Management, and Systems Concepts." January 1972.

Noland, Warren G. and Ralph J. Woodin. "Migration Patterns of Vocational Agriculture Graduates in Ohio." July 1971.

Steele, Doris H. and Clarence J. Cunningham. "Opinion Leadership in Family Living Among Low Income Homemakers in the Expanded Nutrition Program in Ohio." April 1972.

Welton, Richard F. and Ralph E. Bender. "Relationship of Student Characteristics and Program Policies to Participation in FFA." July 1971.

Guiler, Warmbrod, Wilson, and Woodin and several graduate students attended the Central Region Research Conference in Agricultural Education held at Purdue University, August 1971. Warmbrod attended an American Educational Research Association Training Session on "Applied Linear Regression Analysis in Educational Research" held at the University of Chicago, April 1972. During 1971-72 Warmbrod served as Chairman of the Special Interest Group on Vocational-Technical Education of the American Educational Research Association.

The Department's 1973-75 and 1975-77 Biennial Plans developed during the year include a program improvement project titled "Agricultural Education Research and Development Program." The major goals of the proposed program improvement are (a) the establishment of a research program in agricultural education (vocational-technical and extension education) that is supported by College and Ohio Agricultural Research and Development Center funds, (b) the establishment of a Department of Agricultural Education in the Ohio Agricultural Research and Development Center, and (c) the further improvement of the graduate program in research methodology offered by the Department. The proposal requests additional faculty and graduate research associate positions for persons who will plan and conduct research, prepare proposals for research to be funded from sources outside the University, and direct research conducted by M.S. and Ph.D. candidates.

Faculty members directed 17 Ph.D. dissertations and 2 M.S. theses which were completed in 1971-72. Faculty members are currently supervising 28 Ph.D. dissertations that are in progress.

Studies Completed

Ph.D. Dissertations

Adams, Richard N. "Continuing Education for Technical College Students." (Bender)

Byers, Charles W. "The Relationship of Selected Variables to the Supervision Provided Students of Vocational Agriculture by Their Teachers." (Bender)

Hillison, John H. "Manpower Needs in Environmental Management." (Warmbrod)

Hutchings, Ronald P. "The Influence of Excessive Fat Prior to Weaning on the Milking Potential of Beef Heifers." (Bender)

Kunzru, Omkar N. "Role of the Area Extension Agents in Program Development as Perceived by Selected Extension Personnel." (Cunningham)

Lumpkin, Oliver R. "Characteristics of Disadvantaged Rural Youth in Southern Secondary Schools." (Bender)

Miller, James R. "A Theoretical Model to Improve the Extension Education Outreach of The Ohio State University; Utilizing Marketing, Behavioral, Business, Management, and Systems Concepts." (McCormick)

Parkhurst, Carmen R. "The Information Sources and Educational Needs of Commercial Poultrymen in Ohio." (Cunningham)

Rapp, Gene E. "Perceptions of the Role of an Agricultural Technician." (Bender)

Rathore, Omkar S. "Adoption of Extension Innovations Among Selected Personnel in the Ohio Cooperative Extension Service." (Cunningham)

Reeves, Wade H. "Church-Related Programs in Agricultural Education in Cameroun and Uganda, Africa." (Bender)

Reid, Richard A. "Guidelines for Evaluation Activities Conducted by State Advisory Councils for Vocational and Technical Education." (Woodin)

Russell, Earl B. "Development of an Instrument to Measure the Change Orientation of Vocational Teachers." (Warmbrod)

Soobitsky, Joel R. "Perceived Training Needs of Urban Cooperative Extension Agents Working with Disadvantaged Audiences." (Cunningham)

Steele, Doris H. "Opinion Leadership in Family Living Among Low Income Homemakers in the Expanded Nutrition Program in Ohio." (Cunningham)

Vice, Billy J. "Variables Related to Continuing Agricultural Education in Kentucky Schools." (Bender)

Zurbrick, Phillip R. "Effectiveness of a Teacher Reference Utilizing an Inductive Mode and Principles Approach with High School Vocational Agriculture Students." (Bender)

M.S. Theses

Rohrer, John. "Factors Related to Regional Planning Commission Activity." (Cunningham)

Sherer, George. "Producers Educational Needs in Marketing of Feeder Calves in Selected Eastern Ohio Counties." (Cunningham)

Research Completed by Staff (Not Previously Listed)

Bender, Ralph E. "The 1971 Occupations of Recent Graduates of Vocational Agriculture in Ohio." September 1971.

Jenkins, David D. "Inventory of Professional In-Service Training Needs, Ohio Cooperative Extension Service."

Woodin, Ralph J. "Supply and Demand for Teachers of Vocational Agriculture in 1971." December 1971.

Young, Richard E. "Evaluation Report--Agronomy Workshop, Ohio Cooperative Extension Workshop." November 1971.

Young, Richard E. "Evaluation Report--Farm Management Workshop, Ohio Cooperative Extension Serivce." October 1971.

Young, Richard E. "Evaluation Analysis--1972 Pesticide Up-Date Workshops, Ohio Cooperative Extension Service."

Young, Richard E., Cunningham, C. J., and Moore, P. B. "Area Staffing Pattern Study, Annotated Bibliography." January 1972.

Honors S udents' Individual Studies

Pickering, Ervin Roger. "Land Laboratories in Ohio." (Wolf)

Rosenbeck, Thomas J. "Leadership Activities and Traits of High School Vocational Agriculture Students." (Wolf)

Studies in Progress

Ph.D. Dissertations

Beasley, Gary. "An Assessment of an Instructional Unit for Preparing Users of the Educational Resources Information Center (ERIC) System." (Taylor)

Bloss, Norman F. "The Relationship Between Enrollment in Agricultural Education and the Vocational Maturity of Secondary School Students." (Warmbrod)

Breedlove, Frank. "Performance Objectives of Agricultural Mechanics Programs in Joint Vocational Schools." (Wilson)

Cobb, Nimrod. "In-Service Education Activities of Teachers of Vocational Agriculture in Alabama." (Woodin)

Cummins, James E. "A Follow-up of Agricultural Technician Education Graduates and Non-graduates in Ohio--1965-68." (Bender)

Farrington, William S. "The Relationship of Professional Preparation of Technical Agriculture Teachers to Students' Success." (Warmbrod)

Foreman, Ronald. "The Effectiveness of the Early Placement Program with Respect to Transition from School to Work." (Bender)

Howell, David. "Effectiveness of a Student Reference in Changing Attitudes of High School Students Toward the Protection of the Environment." (Warmbrod)

Kowalka, Ronald C. "Evaluation of the Career Education Program in the Mansfield, Ohio, Public Schools." (Wilson)

Lindamood, John. "Continuing Education Programs for the Dairy Food Industry." (McCormick)

McCutcheon, J. Randall. "An Assessment of Factors Related to a Diffusion Strategy for Simulation Training Materials." (Taylor)

Miller, Raymond A. "An Evaluation of the Living Learning Program for Undergraduates in Agriculture and Natural Resources at The Ohio State University." (Bender)

Moore, Philip B. "Staffing Patterns in Extension Today: The Role of the Area Versus the Traditional County Agent." (Cunningham)

Morgan, John P. "Benefits and Costs of an Adult Education Program for Farmers." (Warmbrod)

Myers, Donald. "The Effectiveness of Traditional Lecture and Tele-lecture in Teaching Adults." (McCormick)

Neavill, Arthur T. "Assessment of Competencies of Eleventh and Twelfth Grade Students in Agricultural Mechanics." (Warmbrod)

Newcomb, L. H. "The Effect of Contract Grading on Student Performance." (Warmbrod)

Parker, Kenneth A. "Adapting the FFA to the Educational Needs of Urban Youth Enrolled in Vocational Agriculture." (Warmbrod)

Pittman, Joe. "The Application of Motivational Theory to Extension Personnel." (Cunningham)

Roediger, Roger D. "The Relative Effectiveness of the Aural and Written Individualized Instruction with Students of Different Reading Levels." (Warmbrod)

Sanders, Emerson. "Volunteer 4-H Leaders Working with Youth with Limited Resources." (Cunningham)

Shane, James A. "The Relationship Between Administrative Organizational Structure and Curriculum Comprehensiveness of Community Colleges." (Wilson)

Shannon, Theodore P. "The Effectiveness of the Use of Simulation Materials in Vocational Education Programs for Youth with Special Needs." (Wilson)

Sponaugle, Adam J. "Attitudes of Guidance Counselors Regarding Vocational Education." (Warmbrod)

Stanley, Norman M. "Factors Related to Vocational Agriculture Students' Decisions Concerning Post-Secondary Education." (Bender)

Thaxton, Louis C. "Youth with Special Needs in Metropolitan Ohio Schools." (Wilson)

Wotowiec, Peter. "In-Service Education Needs of Ohio Teachers of Vocational Horticulture." (Woodin)

Yoder, Edgar P. "Self-Concept of Vocational Education Students." (Bender)

<u>Staff Research</u>

Bender, Ralph E. "The 1972 Occupations of Recent Graduates of Vocational Agriculture in Ohio."

Bender, Ralph E. and Cummins, James E. "Agricultural Technician Education in Ohio."

Boucher, Leon and Starling, John T. "Identifying Performance Capabilities Necessary for Students in Production Agriculture."

Cunningham, Clarence J. "Validation of Personnel Selection Instruments in the Cooperative Extension Service."

Warmbrod, J. Robert and Neavill, Arthur T. "The Influence of Instruction in Agriculture in Grades 9 and 10 on Students' Subsequent Educational and Occupational Performance."

Young, Richard E. "Professional Improvement Opportunities for State Level Extension Professionals in Fifteen States."

Young, Richard E., Cunningham, C. J., and Moore, P. B. "National Extension Study to Compare Area with Traditional Staffing Patterns."

In-Service Education Program for New Teachers

An in-service educational program for 83 new teachers of vocational agriculture was coordinated by the teacher education department in cooperation with the state supervisors of vocational agriculture. The purpose of the program was to further develop the competencies needed by teachers to plan, conduct, and evaluate their total program of vocational agriculture in local communities.

The program consisted of over 70 clock hours of workshops, small group seminars, and individual consultation which was planned and conducted by Guiler, Starling and the district supervisors. An orientation program was held at the annual teachers conference. A five day workshop was conducted at the FFA Camp Muskingum on the module system to which the teachers were assigned to sessions concerning their needs. The time was largely devoted to curriculum planning, classroom teaching techniques, reports, policies, procedures, evaluation and teacher responsibilities. Every teacher had the opportunity of giving a demonstration of classroom teaching on video tape and having it evaluated by other teachers.

A three-day seminar was conducted December 27, 28, and 29 for all new teachers at The Ohio State University in the Agricultural Administration Auditorium. The purpose of this workshop was to evaluate progress, improve plans for curriculum, identify problems, and share experiences by taxonomy areas with assistance from the state supervisors of agricultural education. In addition, each new teacher was observed during the school year by teacher educators and assistant supervisors or the local supervisor in the joint vocational school.

Vocational agriculture is becoming more diversified as indicated by the number of new teachers employed in specialized areas reported in Table 9.

There were 51 teachers who were trained in Ohio along with three from a state other than Ohio employed before the school doors opened in September. Twenty-one teachers were employed from industry to fill the vacancies in several specialized areas of teaching such as horticulture, agricultural equipment and mechanics, and agricultural business. Eight student teachers graduating at the end of the autumn quarter 1971 were

on special placement (temporary certificate) due to the shortage of personnel.

A role perception-expectation study initiated in 1965 by Guiler was continued through 1971-72 with all new and returning teachers helping the Department of Agricultural Education assess the relative effectiveness of the internship program afforded teachers during their first year of employment.

A brief outline of the program is as follows:

DATE	ACTIVITY AND PURPOSE	LOCATION
July 12-13-14	Introduction of new teachers to Annual Teacher's Conference and review of In-service program	Scot's Inn, 4800 Sinclair Road, Columbus, Ohio
August 16-20	Five day workshop for all new teachers certified and non-certified - Curriculum Planning	Camp Muskingum Leesville Lake
September	1/2 Day Seminar for all new teachers - classroom management	Small group meetings in schools by geographical areas
October	Individual school visits - Occup. Exp., Classroom and shop problems	In local schools
November	1/2 Day Seminar-Teaching Methods Classroom Problems Occupational Experiences	Small group meetings in schools by geographical areas
December 27-28-29	Three Day Workshop Curriculum Adjustments and Problems concerning the total program for all taxonomies	Agr. Adm. Bldg. Aud. O.S.U.
January	Individual Visits - Agricultural Mechanics - Youth Organization	In local schools
February	1/2 Day Seminar Agricultural Mechanics	Small group meetings in area schools
March	Individual teacher visits Teaching Methods and Individual Improving Programs	In local schools
April	Individual Teacher visits Inventories - Individual Evaluation	In local schools
May	1/2 Day Seminar-Year End Closing School Year-Evaluation Outline for Summer	Small group meetings in area schools
May	Evaluation and Summary of New Teacher Program	

In addition to these activities the teachers were encouraged to participate in off-campus courses as indicated in the graduate education section of this report.

TABLE 9

NUMBER OF NEW AND RETURNING OHIO TEACHERS
AS SHOWN BY AREA OF SPECIALIZATION DURING PAST THREE YEARS
1969-72

Area of Specialization	Number of New Teachers		
	1969-70	1970-71	1971-72
Production Agriculture 0100	45	47	48
Agricultural Business and Supplies 0200	2	3	7
Agricultural-Industrial Equipment and Service 0300	6	7	8
Ornamental Horticulture 0500	15	12	10
Farm Business Planning and Analysis 9900	3	0	3
Agricultural Resources and Environmental Science	0	3	5
Agricultural Work Experience (AWE) 9900	12	3	2
TOTAL	84	75	83

An evaluation of new and returning teachers of vocational agriculture was made by school administrators at mid-year and at the end of the school year. These data were used for basis of individual teacher counseling and to further enhance the total in-service education program.

In-Service Education for All Teachers of Vocational Agriculture

The in-service education program which is a cooperative effort between the supervisory staff, State Department of Education, and the teacher education staff was designed to further develop competency in teaching vocational agriculture. This program during the past year was coordinated by Welch Barnett and Gilbert Guiler.

A total of 332 teachers participated in 14 non-credit, in-service workshops held throughout the state. These programs were planned and conducted primarily by resource personnel under the guidance of Welch Barnett and other supervisors.

Summer Workshops
Non-Credit, In-Service
July 1, 1971 - June 30, 1972

Title	Attendance	Dates	Location
Developing Leisure Resources	26	July 19-21, 1971	Tri-County JVS
Estate Planning	39	July 20, 1971	Wayne County JVS
Land Appraisal	21	July 20-21, 1971	Otsego H.S.
Farm Appraisal	41	July 21-22, 1971	Wayne County JVS
Economics in the Use of Farm Power and Equipment	10	July 26-27, 1971	Allen East H.S.
Livestock Breeding	20	July 27-30, 1971	Wilmington H.S.
Forage Management	28	July 27-28, 1971	Marietta
Money Management	24	July 29-30, 1971	Four County JVS
Landscaping	21	August 3-6, 1971	Cleveland
Methods of Teaching Farm Mechanics	40	August 4-6, 1971	Patrick Henry H.S.
Money Management	14	August 5, 1971	Wilmington H.S.
Land Appraisal	21	August 5-6, 1971	Wilmington H.S.
Farm Business Planning and Analysis	15	August 10-11, 1971	Union Local H.S.
Estate Planning	12	August 17, 1971	Wilmington H.S.

During the period June 12-30, 1972 there were 179 teachers enrolled in 16 different professional courses, technical courses, and workshops as follows:

Course Number	Course Title	Enrollment	Instructor
Ag Ed 621	Curriculum Planning	38	Guiler
Ag Ed 631	Methods of Teaching	67	Bender & Wilson
Ag Ed 640	Teaching Materials	20	Boucher
Ag Ed 684.40	Ag. Bus. & Service Interns	4	Wolf & Watkins
Ag Ed 684.40	Ag. Equip. & Mech. Interns	8	Hummel & Johnson
Ag Ed 684.40	Ag. Res. Consrtvn. Interns	2	Barnett & Guiler
Ag Ed 684.40	Horticulture Interns	11	Davis & Newcomb
Ag Ed 790.12	Ag. Business & Supplies	23	Wolf & Watkins
Ag Ed 790.15	Horticulture (1st year)	17	Newcomb

Course Number	Course Title	Enrollment	Instructor
Ag Ed 790.23	Continuing Education FBPA	21	Starling
Ag Ed 885	Research Methods	17	Warmbrod
Ag Eng 550	Pollution Control & Waste Utilization	8	White
Ag Eng 594	Ag. Mech. (Constr. & Maint.)	13	Johnson
Agron 594	Crop Production	31	Herr
An Sc 594	Animal Breeding & Genetics	14	Cline
Nat Res 694.02	Environmental Studies	12	Townshend

International Education

The Department is represented on the International Agricultural Advisory Committee for the College of Agriculture and Home Economics, Ohio Agricultural Research and Development Center and the Ohio Cooperative Extension Service by Leon W. Boucher. Committee action supported the College Peace Corps for Tunisia Seminar, student study abroad and scheduled seminars in cooperation with various academic units.

The Department helped recruit students and young farmers for the Peace Corps Intern program for Tunisia. Regular Peace Corps personnel were recruited from the vocational agricultural teachers ranks. Mr. and Mrs. Dan Humphrey will be on contract in Sierra Leone Africa for two years. Dan taught at Patrick Henry High School.

Barry Glaz,a junior in agricultural education completed a year's study at Punjab Agricultural University at Ludhiana, India and returned to Ohio State University in May, 1972. This was in cooperation with the student exchange program between our College of Agriculture and the Punjab Agricultural University in India. A program of studies was identified and approved by both institutions before the student left for foreign study. All credits are accepted by the home institution permitting the student to graduate according to his normal schedule.

Omkar Nath Kunzru of India received his Ph.D. degree in agricultural education. His dissertation related to "Role of the Area Extension Agents in Program Development as Perceived by Selected Extension Personnel." Omkar Singh Rathore of Pakistan received his Ph.D. in agricultural education with a dissertation topic "Adoption of Extension Innovations Among Selected Personnel in the Ohio Cooperative Extension Service."

Six other foreign nationals continued educational programs in the department. They were: Sumita Roy, Rajeswari Venkatraman, Kwado Opare and Jabar Singh of India; Ted Lee of Korea; and Nasrullah Hashemi of Afghanastan.

Arthur Deisher, an agricultural education major, participated in the International Farm Youth Exchange Program by living with participating families in England. Several of the agricultural education graduates are serving in Peace Corps positions in Viet Nam, India, South America, Africa, Samoa, and British Guiana.

The Department cooperates with the International Affairs Office of the College in hosting visitors from foreign countries. Visits to secondary schools and area vocational schools are arranged upon request and need of the foreign participants.

Curriculum Materials Service

The Ohio Agricultural Education Curriculum Materials Service is a cooperative activity sponsored by the Agricultural Education Service, State Department of Education, and the Department of Agricultural Education. The purpose of the Service is the improvement of instruction in local agricultural education programs. The activities of the Service are under the direction of Harlan E. Ridenour.

An advisory group composed of local agricultural education teachers and representatives of the supervisory and teacher education staffs served to assist the Service in establishing priorities for developmental projects. When needed, special advisory groups in specific program areas, composed of experienced teachers, staff members, and representatives from industry and government, are assembled to assist the Service with specific developmental projects.

The Curriculum Materials Service assists in the identification of instructional materials needs. A search from all known available sources is then made to identify available materials. Such materials are evaluated by the Service with the assistance of selected teachers and program area specialists. These available materials suitable for use in Ohio programs are then cataloged and made available to Ohio teachers through the Curriculum Materials Service. A total of 583 such items were made available to Ohio teachers. An additional 90 items, available from commercial sources, were listed which teachers could order directly from the source.

In those areas in which suitable instructional materials are not available, the Curriculum Materials Service prepares those items which support the curricula of Ohio teachers. The 1972 catalog lists 129 such items.

The materials published by the Ohio Agricultural Education Service during the 1971-72 fiscal year were as follows:

Manuals

Trees for Landscaping, Identification, Culture, Use (Revision)
Shrubs for Landscaping, Identification, Culture, Use (Revision)
Some Common Types of Insects
Membership - The Pathway to Leadership
Introduction to Environmental Protection
Money Management
Vocational Horticulture Record
The Garden Center Worker
Trends in Agriculture. A publication for each of the 88 Ohio counties based upon census data.
Ups and Downs - The Basic Principles of Ladder Safety
Ladder Safety Test
Curriculum for Agricultural Education (22" x 22" chart)
Agricultural Education Student Progress (17" x 28" chart)
Opportunities in Agricultural Occupations (Student Manual)
Opportunities in Agricultural Occupations (Teacher's Guide)
Human Relations in Business (Student Manual)
Human Relations in Business (Teacher's Guide)
Advertising and Promotion (Student Manual)
Advertising and Promotion (Teacher's Guide)
Marketing Agricultural Products (Student Manual)
Marketing Agricultural Products (Teacher's Guide)
Business Money Management (Student Manual)
Business Money Management (Teacher's Guide)
Selling and Salesmanship (Student Manual)
Selling and Salesmanship (Teacher's Guide)
Business Procedures and Records (Student Manual)
Business Procedures and Records (Teacher's Guide)
Keeping Your Records Straight (AWE 5)
Budgeting and Spending (AWE 6)
Getting Started on Your Job (AWE 7)
Taking Care of Yourself (AWE 8)
Instructional Units on Agricultural Marketing
A Teacher's Guide to Farm Money Management
Farm Records - A Management Tool
Farm Accounting Problem (Student Manual)
Farm Accounting Problem (Teacher's Manual)
Agricultural Chemicals (Major Revision)
Conservation Aide
I. Soil and Water Conservation
II. Defining Soils and Watersheds
III. What Are the Responsibilities of a Soil and Water District Employee
IV. Surveying
V. Engineering Conservation Structure and Practices

Slide Series

Tillage Systems for Corn (70 color slides)
Poinsettia (43 color slides)
Soil and Its Properties (65 color slides)
Shrubs for Landscaping

Transparencies

Interpretation of Farm Business Analysis

Materials Currently Under Development

Occupational Opportunities in Environmental Management
Curriculum Guide and Instructional Materials for Environmental Protection Occupations
Electrification Unit
AWE 9 - Insurance
AWE 10 - Holding Your Job
Insect, Tick, and Mite Pests of Livestock and Pets (Under final editing)
Insect Pests of Field Crops and Stored Grains
Pesticides
Feeds (Major Revision)
Viburnum - Color slide series (final stages)
Series of approximately eight manuals dealing with the cooperative way of doing business. (Five manuals in 1st and 2nd draft stage)
Turf Management (Final editing and layup)
Some Identifying Characteristics of Seeds Common in Midwest (Major Revision)
Fork Lift Safety
Safety with Jacks and Hoists
Seed Production of Corn, Soybeans, and Small Grain - Color slide series (Now being printed)
The Inside Story of Madam Brood Sow - color slide series (Now being printed)
Flowering Shrubs - Color slide series (Now being printed)
Trees for Landscaping - Color slide series (Under development)
Business Procedures for a Landscape Service Organization (Final printing)
Balers

Materials from a variety of sources were distributed through the Curriculum Materials Service --

Film and Video Tape Catalog -- Cooperative Extension Service
Ohio Agricultural Education News -- Department of Agricultural Education
Soil Conservation District News -- SCS
Ohio Herd Development Observer -- Department of Dairy Science, The Ohio State University

The Ohio Future Farmer -- Ohio FFA Association
Ohio Young Farmer -- Young Farmer Association

The Curriculum Materials Service is a member of the American Association for Vocational Instructional Materials. The Director for the Ohio Service serves as a member and Vice President for the American Association Board of Directors. As a result of the participation, a total of 21 publications, four film strips, nine color slide series, and six transparency sets are available to Ohio teachers through the Ohio Service. The Service issues three catalogs as follows:

Ohio Curriculum Materials -- Listing materials developed and produced by the Ohio Service

Curriculum Materials -- Which lists materials which are purchased from other sources for resale to Ohio teachers.

AAVIM Teaching Aids -- Which lists the materials produced by the American Association for Vocational Instructional Materials.

Materials developed and produced by the Ohio Agricultural Education Curriculum Materials Service have been distributed to schools, farmers, and industry on a national basis.

Special Grants

A research and development project to identify environmental protection occupations was completed as of July 1, 1972. Occupations in the area of environmental protection were identified. Those appropriate for inclusion in vocational education programs were selected. Task analysis was conducted on the selected occupations. The follow-up stage will be the development of curriculum and supporting instructional materials.($34,900.00)

Career Education in Agribusiness, Natural Resources and Environmental Improvement. A United States Office of Education project to develop curriculum guides in the following areas:

K - 6th grade	Awareness
7 - 8th grade	Orientation
9 - 12th grade	Exploration
11 - 12th grade	Preparation

Roger D. Roediger is Director of the Project which runs from June 15, 1972 to June 15, 1974. ($260,000.00)

Martha Holden Jennings and Ohio Farmer Cooperative Project. A project funded by the Foundation, the Ohio Council of Farmer Cooperatives, and the Ohio Agricultural Education Curriculum Materials Service. Materials are

being developed which deal with the cooperative way of doing business. Separate units are being planned for rural and urban students. Dr. J. H. Lintner is developing the materials. ($20,000.00)

Ohio Farm and Home Electrification Council is funding the development of materials for farm and home electrification. Roger D. Roediger is coordinating the project. ($1500.00)

Farm Business Planning and Analysis

Approximately 750 farm operators received instruction in Farm Business Planning and Analysis through programs conducted by Ohio teachers of vocational agriculture during the past year. This instruction was provided by ten full-time and four part-time adult instructors as well as 43 regular high school teachers who provided instruction for 4 to 6 couples beyond the contractual day.

A summary of farms which was submitted for computer analysis showed an average capital investment of $100,000 per farm so this instructional program had an influence on farm business investments of over $74 million.

In-service training in Farm Business Planning and Analysis and related areas was provided by John Starling in cooperation with staff members in the Department of Agricultural Economics and the Cooperative Extension Service. This training included: (1) an off-campus class held during the Autumn Quarter at the Lima Campus of The Ohio State University in which sixteen teachers and one banker were enrolled; (2) a summer workshop which was conducted on a half-day basis for a period of 12 days in which 18 teachers were enrolled; (3) a two day non-credit seminar held in Belmont County in which fourteen eastern Ohio teachers and two county agents from Switzerland participated; and (4) small group meetings held at various locations throughout Ohio which were attended by 67 different teachers.

In addition to in-service training for teachers of vocational agriculture a series of 15 two-hour sessions was conducted during the Winter Quarter for 17 branch managers of the National City Bank in Marion County.

The following instructional materials were prepared for teacher use:

"Farm Records a Management Tool," 85 pages;
"Farm Money Management," 68 pages; and
"Unit Budgets for Major Livestock and Crop Enterprises," 60 pages.

Certification for Local Supervisory Positions

During the year the department cooperated with the Division of Vocational Education of the State Department in proposing a program to certify teachers and others interested in becoming local supervisors of vocational agriculture. According to the state standards, it is necessary for a person to have 27 months of successful experience in vocational agriculture and the completion of at least 15 quarter hours beyond the Bachelor's degree. The 15 quarter hours were identified as follows:

Six hours of required courses:

Agricultural Education 811, Administration and Supervision, 3 hours
Agricultural Education 621, Curriculum Development, 3 hours

Nine hours to be selected from the following:

641, Occupational Experience in Agricultural Education,	3 hours
684.10, Internship in Agricultural Education,	3 or 5 hours
693, Individual Studies,	2 or 3 hours
770, Evaluation,	3 hours
790.21, Workshop for Supervisors,	3-5 hours
885, Research Methods,	3 hours

Other desirable electives for the prospective supervisor include:

622, Continuing Education in Agriculture	3 hours
631, Methods in Teaching Agriculture	3 hours
642, Youth Organizations in Agriculture	3 hours
795.03, Seminar in Leadership Development	1-3 hours
795.06, Seminar in Communication	1-3 hours
810, Principles of Vocational-Technical Education	3 hours
823, Program Planning and Development	3 hours

Public Information

Every faculty member of the department contributed to a public information program on agricultural education. Warmbrod is consulting editor of The Agricultural Education Magazine. Bender prepared ten issues of "TEACH," a newsletter for staff members and graduate students. Boucher edited "Ohio Agricultural Education News," which is published quarterly and distributed to all teachers in the state as well as leaders in other states. A total of 983 copies of the publication is mailed quarterly.

Members of the staff have had articles published during the past year in the American Vocational Journal, the Agricultural Education Magazine, the Ohio Vocational Reporter, the National Future Farmer, the

Ohio Farmer, and the Journal of American Association of Teacher Educators in Agriculture. The staff assisted the Ohio Vocational Agriculture Teachers Association and the state supervisors in publicizing vocational agriculture activities at the Ohio FFA Convention, the Ohio Young Farmer Convention, the Ohio State Junior Fair, the Annual Teachers Conference, and the Farm Science Review.

Other public information activities included Guiler's service as Membership Secretary of the Ohio Vocational Association and Boucher's service as a member of the American Vocational Association Public Information Committee. Numerous items have been published in University channels such as the faculty staff bulletin, the blue sheet and the faculty information service. Majors in the Department of Agricultural Education have served as a speakers bureau for local high schools emphasizing teaching agriculture as a career.

Facilities

The Department is provided 13 offices, 5 secretarial stations, one conference room, three rooms for 30 plus graduate students, two readily available classrooms, and such others as needed in the Agricultural Administration Building.

Finances for the year limited the additions to facilities to the following: drapes in Room 208, table and four chairs, upholstering 16 chairs, two filing cabinets, and refinishing one desk.

Space for staff and storage is urgently needed. The lack of air conditioning is affecting staff efficiency. Considering the work load of the staff in the Department during the summer months, it seems most essential that provisions be made to secure air conditioning. At the time of preparing this report plans were underway to install six window units.

Long range plans call for a new construction south of the Agricultural Administration Building and Stadium Drive to house the Department of Agricultural Education as well as the other departments of vocational education on the campus, the Agricultural Library, and a Teaching-Learning Center for the College. The target date for the project has not been determined.

The preliminary planning for the vocational-technical facilities is being done by representatives of the various vocational services including Wolf from agricultural education. The first report was presented in June 1971. It gave the historical background, functions, uniqueness, impact, service areas, priorities, minimum number and room sizes, number of offices and rooms, office size, room area requirements, room specialization, and faculty locations.

The final report was presented to Deans Roy M. Kottman and Luvern Cunningham in June, 1972.

Alumni Association

At the annual meeting of the College Alumni Association held on March 25 at the Center for Tomorrow, James Dougan, as recommended by the Department, was awarded a Distinguished Alumni Award. There was no special meeting of the Alumni Association for the Department during the year. However, the Executive Committee did meet to set up preliminary objectives for the annual meeting during 1972-73.

Biennial Plans - 1973-75 and 1975-77

The Department of Agricultural Education proposed the following program improvements and new programs to the College of Agriculture and Home Economics to be initiated and developed during the 1973-77 period. The various programs and a brief analysis of their scope beginning in 1973 are as follows.

1. Air Conditioning . . . . . New Program

The offices and special classrooms of the Agricultural Education Department should be air conditioned. This facility will result in more efficiency on the part of the total staff. Air conditioning is particularly needed because of the amount of activity and work during the summer quarter. It is estimated that such a program would cost $60,000 if central air conditioning is installed. If window units are used, the cost is estimated at $10,000.

2. Research and Development . . . . . Program Improvement

The major purpose of this program is to further expand and develop the program of research in the department. The establishment of a research department, including both vocational-technical and extension education, as an integral part of the Ohio Agricultural Research and Development Center as identified in the long-range plans of the College is proposed. The request calls for an additional faculty member, a research associate, and a part-time secretary to begin July 1, 1973. Priority emphasis of the research includes development and assessment of the use and effectiveness of learning resources and new instructional media; estimation of employment opportunities in occupations requiring knowledge and skill in agriculture; evaluation of educational programs in local and area schools, post-secondary technical institutes, and extension programs; and the establishment, conduct, and appraisal of pilot programs in vocational and extension education. The estimated cost of this program is $23,800, one-half of which is to be provided by OARDC.

3. Individualized Instruction . . . . . New Program

This program emphasizes improvement of instruction through the

initiation, demonstration, and experimental use of individualized instruction procedures and techniques. Attention will be focused on individual differences and varied needs of students in complementing and supplementing regular classroom instruction. It is anticipated that instructional units will be located in the Agriculture Library.

Present faculty can initiate and design the program; however, a full-time visual-graphic artist is needed. This person is to develop differentiated learning materials and instructional aids as well as operate and maintain audio visual equipment. A research associate is also essential to help students make the most effective use of the materials and equipment. It is estimated that costs beginning July 1, 1973 would be $17,400.

4. Visual Communications Course . . . . . New Program

The Curriculum Committee of the College of Agriculture and Home Economics suggested the offering of a new course "Visual Communications in Agriculture." The department is proposing that such a course be offered beginning the autumn quarter 1973. It is anticipated that at least 150 students would be enrolled during the three academic quarters. A new staff member is needed to begin the development of this course and align appropriate presentation aids. The estimated cost of the new staff member, supplies, travel, and equipment amounts to $20,650.

5. Preparation of Specialized Personnel . . . . . New Program

This proposal includes three segments: (a) undergraduate internship in agricultural occupations; (b) preparation of area school supervisors in agriculture; and (c) improved preparation of teachers for vocational horticulture.

To qualify for the new certification standards it is necessary for all prospective teachers to have at least one year of occupational experience. The University should help provide and supervise this experience in selected business establishments and agencies throughout the state. This experience should be individually planned and supervised in order for it to be more meaningful. It is proposed to secure selected teachers of vocational agriculture to assist in providing some of the on-site visitations.

Due to rapid expansion of vocational education in agriculture, it is anticipated there will be a need for preparation of 35 supervisors in addition to 20 who are presently serving as local supervisors of agriculture. A part-time staff member is needed to develop this pre-service and in-service program that will meet state certification standards as well as make the program more effective.

About 100 teachers of vocational horticulture will be working in Ohio schools in 1972. These teachers need special in-service education

and more assistance is needed in the preparation of future teachers of vocational horticulture. A one-half time faculty member employed in cooperation with the Department of Horticulture could provide the teaching and other in-service education.

These three programs necessitate 1.12 FTE staff, 1.25 secretaries, and one research associate. The total cost as of July 1, 1973 is $33,925 including $5,000 for travel which would be provided from State Department funds.

6. Youth Development . . . . . Program Improvement

This program consists of preparation of professional youth workers who have a responsibility for the development of youth education programs primarily outside the public schools. The major emphasis will be for the development of competence to work with the 4-H club program. Youth workers in other non-governmental youth programs might also be engaged in such a program. Additional part-time faculty members are needed to support one additional undergraduate course and four graduate level courses designed specifically for youth personnel. The graduate courses include (1) Development of Youth Education Programs, (2) Camp Program Development and Administration, (3) Volunteers in Development of Youth Education, and (4) Administration of Youth Education Programs. This program can be initiated in 1973 with the addition of a .4 FTE faculty member and a part-time secretary necessitating a total cost of $7,825.

7. Curriculum Development and Instructional Materials . . . . . Program Improvement

The department is interested in further expansion and improvement of curriculum and instructional materials as a service to teachers of vocational agriculture. This service includes the curriculum development for the specialized programs in vocational agriculture, their evaluation, and dissemination. Non-credit, in-service programs should be developed with the teachers as well as conducting research including pilot and demonstration programs. This expanded program starting in 1973 necessitates a new staff member, two secretaries, three graduate associates, and two persons on wages. Cost is estimated at $87,500. Of this amount, $78,000 would be available from outside sources including earnings of the service and contributions from the State Department of Education.

8. Preparing Personnel for Agricultural Technician Education Programs . . . . . New Program

This is an effort to provide leadership in developing and conducting educational programs to prepare teachers and other personnel for service in institutions where agricultural technicians are being trained. This includes in-service education to persons presently engaged in such programs as well as a long-range, continuing, pre-service program. It

is assumed that this program will be initiated July 1, 1972 if Dr. Halterman's salary is provided through funds in technical education. The salary and position in the department then would be used to employ the person to head up this phase of the program. If this is not realized, it is proposed that the program be initiated as of July 1, 1973. In addition to the faculty member, a part-time secretary and one research associate are needed. The costs of the program are estimated at $27,400.

THE STAFF IN AGRICULTURAL EDUCATION, 1971-72

Name and Title	Sources for Salary: Teach Educ	Supvn in Vo-Ag	Coop Ext	Other	Notes
Professors					
Bender, Ralph E.	X		X		Chairman of Department
Boucher, Leon W.	X				Professor 7-1-71
Cunningham, Clarence J.	X		X		Professor 7-1-71
Cehres, Albert F.			X		
Guiler, Gilbert S.	X				
Halterman, Jerry J.				College of Agriculture	Director, Technical School at Wooster
Johnson, Carlton E.				Dept. of Agr. Engineer.	In charge of agr. mechanics
McCormick, Robert W.	X			University Administration	Assistant Vice President in charge of Continuing Education
Ritchie, Austin E.				College of Agr. Admin.	Assistant Dean
Robinson, D. B.					Professor Emeritus
Taylor, Robert E.				Center for Voc.-Tech. Ed.	Director of Center
Warmbrod, J. Robert	X				
Watson, William H.				University College	Associate Dean and Professor 7-1-71
Wilson, Richard H.	X				
Wolf, Willard H.	X				
Wood, Wilbur B.					Professor Emeritus
Woodin, Ralph J.	X				
Associate Professors					
Bolender, Elbert O.					Emeritus, Supervisor of Voc. Agr.
Bruny, Seifrid P.			X		Started 7-1-71
Hull, William L.				Center for Voc.-Tech. Ed.	
Jenkins, David D.	X		X		
Magisos, Joel H.				Center for Voc.-Tech. Ed.	Associate Professor 7-1-71
Robinson, Ted R.				University Administration	Associate Professor 7-1-71
Schroeder, Wayne E.				Center for Voc.-Tech. Ed.	
Starling, John T.	X	X			Associate Professor 7-1-71

THE STAFF IN AGRICULTURAL EDUCATION (CONTINUED)

Name and Title	Sources for Salary: Teach Educ	Supvn in Vo-Ag	Coop Ext	Other	Notes
Assistant Professors					
Borcher, Sidney D.				Center for Voc.-Tech. Ed.	Resigned 12-20-71
Budke, Wesley E.				Center for Voc.-Tech. Ed.	Started 7-1-71
Geyer, Richard E.				OARDC & College Admin.	
Gray, Kenney E.				Center for Voc.-Tech. Ed.	Started 7-1-71
Hamilton, James B.				Center for Voc.-Tech. Ed.	Started 7-16-71; Located at University of Missouri
Koble, Jr., Daniel E.				Center for Voc.-Tech. Ed.	Adjunct Assistant Professor 3-1-72
Lau, Duane B.			X		Started 7-1-71
Leidheiser, Paul C.			X		Started 7-1-71
Lifer, Charles W.			X		Assistant Director 4-H
McCaslin, Norval L.				Center for Voc.-Tech. Ed.	Started 7-1-71
McCracken, J. David				Center for Voc.-Tech. Ed.	
Norton, Robert E.				Center for Voc.-Tech. Ed.	Started 8-15-71
Oren, Jr., John W.			X		
Ruble, Floyd J.					Emeritus, Supervisor of Voc. Agr.
Waliser, Don H.				College of Agr. Admin.	Assistant Professor 7-1-71
Young, Clair W.			X		Started 7-1-71
Young, Richard E.	X		X		Assistant Professor 7-1-71
Instructors					
Archer, Clyde F.				Biological Sciences	Assistant Dean
Pulse, Paul F.		X			
Coordinator					
Gutilla, John J.				Research & Survey*	
Specialist					
Windle, Barbara H.				Research & Survey	Started 9-1-71

*This is a service of the Division of Vocational Education, State Department of Education.

THE STAFF IN AGRICULTURAL EDUCATION (CONTINUED)

Name and Title	Sources for Salary: Teach Educ	Supvn in Vo-Ag	Coop Ext	Other	Notes
Consultants					
Barnett, C. Welch		X			
Davis, John H.		X			
Dougan, James E.				State Dept. of Education	Asst. Director of Vocational Education
Gehm, Edgar H.				Research & Survey	10-4-71 to 6-30-72
Koon, Robert H.				Research & Survey	Terminated 9-15-71
Kosbab, George C.				Research & Survey	
Morgan, John P.		X			
Petrie, Edwin T.				Research & Survey	Started 10-18-71
Ridenour, Harlan E.		X			Director, Curriculum Materials Service
Sterling, George A.				Research & Survey	
Tower, C. O.				Research & Survey	Director
Watkins, John W.		X			
Associates					
Bloss, Norman F.	X				Technical educ. with Halterman, Su,A
Cummins, James E.				OARDC	Eval. of technical education,Su,A,W,S
Farrington, William S.		X			Instructional materials, Aug., Sept., A,W,S
Gliem, Joseph A.		X			Instructional materials, Su,A,W,S
Hillison, John H.		X			Instructional materials, Su,A,W,April
Howell, David L.		X			Instructional materials, Su,A,W,S
Hutchings, Ronald P.	X				Technical educ. with Halterman, Su,A
Kowalka, Ronald C.		X			Instructional materials, A,W,S
Neavill, Arthur T.		X			Evaluation of 9th & 10th agr.,A,W,S
Newcomb, L. H.	X				Assisted in undergraduate teaching, Su,A,W,S
Parker, Kenneth A.		X			Identifying horticulture needs, Sept., A,W,S
Roediger, Roger D.		X			Instructional materials, S
Shane, James A.	X				Technical educ. with Halterman, A,W,S
Shannon, Theodore P.		X			Instructional materials, Su,A,W,S
Stanley, Norman M.				College of Agr. Admin.	Technical educ. with Halterman, Su,A, W,S

THE STAFF IN AGRICULTURAL EDUCATION (CONTINUED)

Regular Clerical Staff--Susan Byrd, Sue Cluxton, Martha Ervin, Louise Goodall, Mary Krieger, Faye Malone, Zelma Parker, Sherry Pruitt, Evelyn Roediger, Connie Rummel, Barbara Satchell, Susan Wenger, Julia Williams, Claudia Wolf.

Part-time Clerical Staff--Joy Ailes, Robert E. Baker, Donald Boyd, Leonard Conley, Clarence Fridline, Sandra Gutilla, Mary Joyce, Shirley Kosbab, Joanne Lux, Joan Lyle, Anita Martin, Beverly Newcomb, Flora Nicholson, Susan Prodell, Virginia Sergent, Grace Stearns, and Edgar Yoder.

SOME STAFF SERVICES AND PUBLICATIONS
(As Reported by Staff and Not Included Elsewhere in the Report)

Ralph E. Bender, Professor and Chairman

American Vocational Association
- Received Outstanding Service Award
- Chairman of Constitution Committee

College Committees
- Executive Committee
- Planning Committee to conduct program for improvement of resident instruction
- Technical Education Advisory Committee
- Evaluation of faculty--teaching and counseling
- Research and Training Programs Involving Human Subjects
- Honorary Degrees

Address, Central States Seminar in Chicago, "Whither Vocational Education--In Our Professional Relationship"

Member, Ohio FFA Board of Trustees

Member, The Century Club, The Ohio State University Development Fund

Publications:

"Relationship of Student Characteristics and Program Policies to Participation in FFA" (A Research Report with Richard F. Welton), Department of Agricultural Education, The Ohio State University, July 1971

"The 1971 Occupations of Recent Graduates of Vocational Agriculture in Ohio," Department of Agricultural Education, The Ohio State University, September 1971

Adult Education in Agriculture (with Cunningham, McCormick, Wolf, and Woodin), Charles E. Merrill Publishing Company, Columbus, 1972

"W. F. Stewart: A Pioneer in Developing Vocational Agriculture" (with Willard H. Wolf), The Agricultural Education Magazine, February 1972

"Agricultural Technician Education in Ohio, 1970-71" (A Research Report with James E. Cummins), Department of Agricultural Education, The Ohio State University, April 1972

"The Individual and Purposes of Vocational Education," Chapter in 1972 Yearbook, American Vocational Association (in press)

Leon W. Boucher, Professor

Member, AVA Public Information Program Committee

Secretary, Agricultural Education Staff Meetings

Serve on joint staff production agriculture committee

College of Agriculture International Affairs Committee

University Senate alternate--Agriculture

President, Gamma Sigma Delta

Publications:

"The Status of Teacher Education Programs in Agriculture," Journal of the American Association of Teacher Educators in Agriculture, March 1972

Editor, "Ohio Agricultural Education News"

Clarence J. Cunningham, Professor (and Assistant Director, Staff Development and Program Analysis, Cooperative Extension Service)

Chairman, ECOP Subcommittee on Program Development and Management Information Systems
Visiting Professor, National Extension Summer School, Colorado State University, June 1972
Member, College Committee on Academic Affairs
Member, College Executive Committee
Member, Cooperative Extension Service Administrative Cabinet
Member, Adult Education Association of USA
Member, Commission on Professors of Adult Education
Member, Ohio Adult Education Association
Member, College Graduate Education and Research Committee
Chairman, Cooperative Extension Annual Conference
Consultant, University of Illinois Cooperative Extension Administrative Conference on Evaluation, December 1970

Publications:
Adult Education in Agriculture (co-author), Charles E. Merrill Publishing Company, Columbus, Ohio, 1972
Research-in-Brief Editor, Journal of Extension
"Opinion Leadership on Family Living Among Low Income Homemakers in the Expanded Nutrition Program in Ohio" (Research Report with Doris Steele), Department of Agricultural Education, The Ohio State University, 1972

Gilbert S. Guiler, Professor

Life Member, American Vocational Association and Ohio Vocational Association
Member, Membership Committee of the American Vocational Association
Chairman, Membership Committee of the Agricultural Division of the American Vocational Association
Chairman, Resolutions Committee of the COASTA Organization of the American Vocational Association
State Membership Secretary, Ohio Vocational Association and American Vocational Association for all divisions of vocational education. (Special recognition--Ohio's membership of the AVA ranked No. 1 in the nation)
Member, Board of Directors, Ohio Vocational Association
Member, The Century Club, The Ohio State University Development Fund
Member, State FFA Foundation Board of Trustees
Member, Petitions and Dismissals Committee, College of Agriculture
Chairman, Library Committee, College of Agriculture
Member, National Vocational Agriculture Teachers' Association
30 Minute Club
Agricultural Education Department representative to Phi Delta Kappa

Publications:
"How First Year Teachers Perceive Their Abilities," The Agricultural Education Magazine, Volume 42, No. 12
"The 'Plant of the Month' Aids in Public Relations," The Agricultural Education Magazine, Volume 44, No. 3
Contributed notes on membership to each issue of "The Ohio Reporter," Ohio Vocational Association

Jerry J. Halterman, Professor (and Director, Agricultural Technical Institute at Wooster)

Secretary, Ohio Agricultural Technician Education Coordinating Committee
Member, Ohio Board of Regents Master Plan Review Committee on Technical Education
Member, College Executive Committee

Carlton E. Johnson, Professor (Department of Agricultural Engineering and Member of Graduate Faculty, Agricultural Education)

Member, State Advisory Committee for Technical Education in Agriculture
Member, Advisory Committee, Clark Technical College
Chairman, AA for VIM Subject Matter Committee
Member, Finance Committee, Ohio Vocational Agriculture Teachers Association
Member, National FFA Committee to select Agricultural Proficiency Award Winner in Agricultural Mechanics
Member, Safety Committee, College of Engineering
American Society of Agricultural Engineers:
- Chairman, A-214 Committee on Instruction in Mechanized Agriculture
- Member, A-202 Steering Committee Education and Research Department
- Representative, American National Standards Institute Committee Z 53.1, Safety Color Code
- Member, Ohio Section ASAE Member Nominating Committee
- Member, Ad Hoc Visiting Committee of the Engineering Technology, Engineering Council for Professional Development

Publications:
Radio Talk, "The Agricultural Engineering Farm Equipment Contest," WOSU

Robert W. McCormick, Professor (and Assistant Vice President for Continuing Education and Director, Center for Tomorrow)

Executive Council, Office of Educational Services
Vice Chairman, Administrative Advisory Committee on Continuing Education
Secretary, Board of Trustees, United Community Council
Executive Committee, Council on Extension, National Association of State Universities and Land-Grant Colleges
Chairman, Committee on Staff Development, National Association of State Universities and Land-Grant Colleges
Committee on Technology Utilization, National Association of State Universities and Land-Grant Colleges
Vice Chairman, Section on Continuing Education for the Professions, National University Extension Association
Director, Columbus Regional Information Service

J. Robert Warmbrod, Professor

Recipient of Distinguished Teaching Award, The Ohio State University
Chairman, Special Interest Group on Vocational-Technical Education, American Educational Research Association
Member, Committee for Research and Training Programs Involving Human Subjects, College of Agriculture
Member, Committee on Recruitment of Minority Students, College of Agriculture
Member, Graduate Education and Research Committee, College of Agriculture
Member, Honors Committee, College of Agriculture
Proceedings Recorder, Agricultural Education Division, American Vocational Association
Editorial Adviser, Occupational Education Series, Charles E. Merrill Publishing Company
Consulting Editor and Secretary, Editing-Managing Board, The Agricultural Education Magazine
Participant, American Educational Research Association Training Session on "Applied Linear Regression Analysis in Educational Research," University of Chicago, April 8-12, 1972
Visiting Professor, University of Minnesota, Summer 1971

Publications:
"Economics of Vocational-Technical Education." In Gordon F. Law (Ed.) Contemporary Concepts in Vocational Education, First Yearbook of the American Vocational Association, Washington, D. C.: American Vocational Association, 1971, pp. 362-373.
"Agricultural Education Division." Convention Proceedings Digest, Portland, Oregon, December 3-8, 1971. Washington, D. C.: American Vocational Association, 1972, pp. 117-136.
"Individual Goals and Vocational Education." In Alfred H. Krebs (Ed.), The Individual and His Education, 1972 Yearbook, American Vocational Association (in press)

Richard H. Wilson, Professor

National Committee on "Employment Opportunities and Training Needs in Agribusiness"; participating as coordinator of state study
Chairman, Joint Staff Curriculum Committee on Undergraduate Study for Agricultural Mechanics
Staff representative for developing Career Education Programs and Consumer Education Programs

Publications:
"Management Performance Pays Off--In Profits," The Agricultural Education Magazine, February 1972 (with John Starling)

Willard H. Wolf, Professor

Secretary-Treasurer, Agricultural Education Alumni Association
Chairman, College Coordinating Counselors Committee
Member, College Committee for Academic Assistance Program
In charge of chemistry tutoring for AAP students and counseling freshmen students who designated intentions to major in agricultural education
Member, Committee of Joint Agriculture and Education Colleges' Vocational Facilities Committee
Department Coordinator of Agricultural Education Scholarships
Member, Committee for Residence Halls for College Students of Agriculture and Natural Resources

Publications:
Faculty Editor, Townshend Educator
Published the Agricultural Business Workshop Report for 1971
Adult Education in Agriculture (co-author), Charles E. Merrill Publishing Company, Columbus, Ohio, 1972
"W. F. Stewart--A Pioneer in Developing Vocational Agriculture" (with Ralph E. Bender), The Agricultural Education Magazine, February 1972
"Using Advisory Committees Wisely" (with John Mulvana), The Agricultural Education Magazine, February 1972

Ralph J. Woodin, Professor

Member, Vocational Education Curriculum Committee, College of Education
Member, Recruitment Committee of the College of Agriculture
Adviser, Ohio Recruitment Commission
Member, Technical Education Advisory Committee, College of Agriculture
Member, Overall Planning Team for Long Range Planning in Agriculture 1985-2000

Publications:
"A Procedure for Determining if a Significant Difference Exists Between Two Percentages Calculated from Independent Samples" (with Wiley B. Lewis), The Journal of the American Association of Teacher Educators in Agriculture, July 1971
"Migration Patterns of Vocational Agriculture Graduates in Ohio" (A Research Report with Warren G. Noland), Department of Agricultural Education, Ohio State University, August 1971
"Vocational Horticulture Records" (with Kenneth Parker), Ohio Agricultural Education Curriculum Materials Service, August 1971 (revised edition)
"Consumer Education in Agriculture." A Curriculum Guide for Teachers of Vocational Agriculture, Ohio State Board of Education, Division of Vocational Education, September 1971 (editor)
"Improvement Projects in Vocational Agriculture," Department of Agricultural Education, The Ohio State University, September 1971
"Planning Your Vo-Ag Program for the Seventies," The Agricultural Education Magazine, October 1971

Woodin (continued)

"New Approaches to Occupational Exploration in the Middle School" (with Wesley E. Budke), The Journal of the American Association of Teacher Educators in Agriculture, November 1971.
"Supply and Demand for Teachers of Vocational Agriculture in 1971," Department of Agricultural Education. December 1971.
"Change Needed in Agricultural Mechanics Curricula" (with Wiley B. Lewis), The Agricultural Education Magazine, January 1972.
Adult Education in Agriculture (co-author), Charles E. Merrill Publishing Company, Columbus, Ohio, 1972
"Teacher Shortage Continues in Agricultural Education," The Agricultural Education Magazine, April 1972
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HOLDER, DOYLE
ATTITUDES OF PARENTS AND STUDENTS OF DELTA AND MONTROSE COUNTIES TOWARD VOCATIONAL EDUCATION. FINAL REPORT.

COLORADO STATE BOARD FOR COMMUNITY COLLEGES AND OCCUPATIONAL EDUCATION, DENVER.
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DESCRIPTORS - *SCHOOL SURVEYS; AREA STUDIES; FEASIBILITY STUDIES; *STUDENT ATTITUDES; *PARENT ATTITUDES; *VOCATIONAL EDUCATION; CURRICULUM PLANNING; HIGH SCHOOL CURRICULUM; *SECONDARY GRADES; PROGRAM PLANNING
IDENTIFIERS - DELTA COUNTY COLORADO; MONTROSE COUNTY COLORADO

ABSTRACT - AN EFFORT TO PROVIDE THE ADMINISTRATIVE STAFFS OF THE DELTA AND MONTROSE COUNTY SCHOOL DISTRICTS WITH DATA AND IMPLICATIONS RELATIVE TO LONG-RANGE PLANNING FOR CURRICULUM DEVELOPMENT AND EXPANSION, TO DETERMINE WHAT PARENTAL ATTITUDES TOWARD VOCATIONAL EDUCATION WAS, AND HOW THIS AFFECTED THEIR CHILDREN'S ATTITUDES, A SURVEY WAS CONDUCTED OF ALL STUDENTS IN GRADES 9 THROUGH 12 IN THE TWO SCHOOL DISTRICTS DURING THE 1971-72 SCHOOL YEAR WHO WERE PRESENT ON THE DAY OF THE ADMINISTRATION OF QUESTIONNAIRES. A RANDOM TEN PERCENT OF THE PARENTS OF THESE PUPILS WERE SAMPLED AS WELL. FINDINGS AND CONCLUSIONS INCLUDED: (1) IN GENERAL, STUDENTS IN THESE SCHOOLS PERCEIVE THEMSELVES IN A POSITIVE WAY RELATIVE TO HOME, SCHOOL, AND PARENTS, (2) STUDENTS SEEM TO HAVE A GOOD PERCEPTION AND UNDERSTANDING OF THE PURPOSES AND VALUE OF EDUCATION, (3) THERE IS A POSITIVE REACTION OF STUDENTS TO THE IMPORTANCE OF PREPARING FOR FUTURE OCCUPATIONAL ENDEAVORS, (4) PARENTS PLAY A DECIDING FACTOR IN STUDENT COURSE SELECTION, (5) THE MAJORITY OF PARENTS FEEL THAT SCHOOLS SHOULD PLACE GREATER EMPHASIS ON MEETING THE NEEDS OF ALL STUDENTS, AND (6) AS MANY AS 70 PERCENT OF STUDENTS WERE IN FAVOR OF EXPANDING THE VOCATIONAL EDUCATION CURRICULUM. CONCLUSIONS AND RECOMMENDATIONS ARE INCLUDED. (SN)

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FINAL REPORT

ATTITUDES OF PARENTS AND STUDENTS OF DELTA AND MONTROSE COUNTIES TOWARD VOCATIONAL EDUCATION

(Project No. 72-04-02-042)

Doyle Holder

COLORADO STATE UNIVERSITY

FORT COLLINS, COLORADO

August, 1972

COLORADO STATE BOARD

FOR COMMUNITY COLLEGES AND OCCUPATIONAL EDUCATION

VT018405

PURPOSE AND OBJECTIVES

The main purpose of this study was to determine if parental attitudes toward vocational education affected their children's attitudes toward vocational education. To accomplish the purpose of the study, family income, father's occupation, parents' experiences with vocational education, level of parents' education, students' grades, and participation in a vocational program were selected and identified as objectives.

A secondary purpose of the study was to determine the needs for vocational education in the high schools of Delta and Montrose Counties and to provide the school districts with data and implications relative to long-range planning for curriculum. In addition, this data will assist vocational administrators in planning, developing, and implementing realistic programs that are relevant in terms of student and occupational needs of the community.

To accomplish the secondary purpose of the study, the following primary objectives were identified:

1. To determine what the students' present occupational goals and/or aspirations are.

2. To determine students' satisfactions or dissatisfactions with school.

3. To project the number of students desiring to enroll in job skill training while still in high school.

4. To determine what vocational programs should be offered based on student interest.

5. To determine students' educational plans beyond high school.

6. To determine students' feelings and attitudes relative to self, parents, and home.

A third purpose of the study was to determine the parents' attitudes toward education in the two school districts, and their perception relative to their children's role in school. In addition, this data should reveal the parents' attitudes about their children's occupational and professional aspirations in the world of work.

To accomplish these purposes, the following objectives were identified:

1. To determine parents' satisfactions or dissatisfactions with program offerings in the local school system.

2. To determine parents' attitudes toward expanding Vocational Education in the schools.

3. To determine the role parents have in assisting children with planning for job training while still in high school.

4. To determine parents' feelings relative to their children's occupational aspirations and compatibility, relative to their aptitude and ability.

5. To determine parents' attitudes relative to their children's plans for a college education.

6. To determine parents' attitudes relative to increasing taxes and improving the local public schools.

This study was limited to the students, grades 9-12, and parents of the school districts of Delta and Montrose Counties during the 1971-1972 school year. Delta County School District has four high schools with the following enrollments: Delta High School--619, Paonia High

School--245, Hotchkiss High School--191, and Cedaredge High School--198. Total enrollment in Delta High Schools is 1,313.

Montrose County School District has two high schools, Montrose and Olathe. Montrose High School has an enrollment of 961 and Olathe High School has 248 for a total enrollment of 1,209. The total high school enrollment for both districts is 2,522. One hundred per cent of the students present on the day the questionnaire was administered were surveyed.

Parents were selected by random sample, with the assumption that 10 per cent would be representative of the population.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A summary of the major findings based on the data collected and analyzed reveals to the researcher that, generally, students in these schools perceive themselves in a positive way relative to home, school, and parents. Students have a good perception and understanding of the purpose and value of education; but, in some cases, there is an indication that students are confused in regards to the present purposes of on-going programs in the public schools.

The results also indicate that there is a positive reaction of students relative to the importance of preparing for a future occupational endeavor. Educational opportunities with a relevant content should be provided students to better prepare them for future changes in job technology. The value of the data received from this study should stimulate the desire to review program offerings and to review the resources, facilities, equipment, staff, and finances available to be responsive to the individual student's needs in these schools.

Further, based on the results of this study, replication of the study in three years would provide additional data to strengthen the position of the school in the educational spectrum and make it more responsive to students' needs. The data in this study should be of value to those in responsible positions in providing the structural linkage between program planning and program implementation.

Generally, parents reacted positively to the public school's programs. The results indicate that parents have a good perception and understanding of the value of education; but, in some cases, there is an indication that parents are somewhat confused relative to the present purposes of programs within the schools.

The results also indicate that there is a positive reaction by parents toward the importance of planning with their children for careers and future employment.

There is an indication, from the data generated in this study, that additional research should be initiated. The value of the data received from the parents'study should stimulate administrators and policy-makers to review the program offerings, resources, facilities, finances, staff, and equipment available to be responsive to each individual student's needs in the school.

CONCLUSIONS

The conclusions of this study are based on the findings obtained from the data collected within the study. The study was based on six beliefs which were stated and presented in the study. A summary of findings and concluding statements regarding each of these ideas are presented in the following paragraphs along with a statement about their acceptance.

Summary of findings: Students

The major findings based on the data collected and analyzed in this study are as follows:

1. A majority (88 per cent) of the students served in these schools are Caucasian. Other races are in a minority with respect to total student enrollment.

2. The counties can best be described as rural, upper-middle and lower-middle class citizens relative to their social standing by economic class.

3. A total of 658 (31 per ent) of the students indicated an interest in attending a four-year college or university. A total of 34 per cent of the students currently have no plans for education after high school.

4. A total of 44 per cent of the students indicated they had given considerable thought to their future plans for education after high school, 37 per cent some thought, and 19 per cent little or no thought.

5. A total of 1,924 (87 per cent) of the students indicated they had a great deal or some choice relative to future jobs and employment. Only 13 per cent felt there was little or no choice.

6. The results indicate that the majority of the students feel they have a freedom of choice for the occupation they wish to pursue.

7. Guidance counselors and teachers have little influence on students' decisions to enroll in vocational education.

8. Parents and those classified as "other" do influence students' decisions to enroll in vocational education as well as academic courses.

9. A majority (72 per cent) of the students indicated they would go against parents' decisions or wishes relative to their choice of a life's work.

10. A minority (27 per cent) of the students are currently enrolled in vocational courses in their schools.

11. A majority (53 per cent) of the students indicated they were interested in learning a trade while still in high school.

12. Results indicate that 77 per cent of the students were in favor of expanding vocational education in their schools.

13. Fifty-five per cent of the students indicated that they were interested in enrolling for vocational training next year.

14. A majority of the students indicated they like to perform tasks in school where they can work with their hands.

15. The results reveal that students do have respect for manual work.

16. Fifty-seven per cent of the students indicated their parents felt it was important for them to attend college.

Summary of findings: Parents

The major findings based on the data collected and analyzed in this study are as follows:

1. A majority of the parents in these schools generally have some knowledge relative to public school programs in terms of meeting the individual student's need.

2. A total of 99 per cent of the parents have concern relative to their children receiving good grades in school.

3. A majority of the parents have concern for children in the public schools and want them to profit from having this educational experience.

4. Eighty-five per cent of the parents indicated that the local schools should place greater emphasis on meeting the needs of all students--those preparing for college and those preparing for the world of work.

5. Parents (66 per cent) indicated that more of the community resources should be utilized in preparing high school youths for the world of work.

6. A total of 51 per cent of the parents indicated that the school should improve the educational program for those students preparing for college. Twenty-nine per cent felt the school should not, and 20 per cent had no opinion.

7. Parents (26 per cent) felt that more of the students should prepare themselves for college attendance.

8. Sixty-eight per cent of the parents indicated that there should be a more comprehensive program in the public schools (balance between vocational and college preparation).

9. The parents in these school districts indicated a willingness to share increased financial responsibility to expand educational opportunities for students and adults. A total of 41 per cent said yes and 36 per cent indicated that they needed to know more about the plan while only 15 per cent said no.

10. Ninety-three per cent of the parents felt that their children had made appropriate future occupational and professional plans.

11. The parents indicated that their children have a wide range of occupational choices in the world of work.

12. A majority of the parents (76 per cent) indicated they would like to have their children learn some job skills while in high school.

13. The parents (67 per cent) felt their children had the ability and the interest to succeed in their selected occupational or professional fields.

14. Eighty per cent of the parents indicated that a college education was important for their children.

15. Ninety-eight per cent of the parents wanted their children to have some education beyond high school.

16. Parents are unsure about the main purpose of a high school education.

17. A majority of the parents (90 per cent) indicated that it was important to prepare for the world of work while still in high school.

18. The parents indicated that they had given considerable thought to their children's future jobs and employment, and that there was dignity in the world of work.

19. A majority of the parents (93 per cent) indicated that many more students could profit from vocational training while still in high school.

The six ideas were tested statistically and proved to be highly significant, that is, true 95 times out of a 100, there is very little chance of error due to sampling.

Belief 1. There is no sifnificant difference between a student's over-all achievement in school and his attitude toward vocational education.

The data revealed that students with an average of "A" through "D" enroll in vocational education. Generally, the lower the grade

average, the more likely they are to enroll. The least likely student to enroll is the one with an average of "A." Numerically, most vocational students are "B" and "C" students.

Belief 2. There is no significant difference between attitudes toward vocational education, of the students who participate in vocational education programs and those who do not participate in vocational programs.

The data revealed that students who are enrolled in vocational programs had significantly more favorable attitudes toward vocational education than those who were not. However, a majority of the students in the survey would enroll if they had the opportunity.

Belief 3. There is no significant difference between fathers' experience with vocational education and children's attitudes toward vocational education.

A majority of the students whose fathers have had experience with vocational education would enroll in vocational education if they had the opportunity. Apparently fathers who have had experience with vocational education possess a positive attitude and this is reflected in their children's attitudes.

Belief 4. There is no significant difference between the occupations of the fathers or heads of households and their children's attitudes toward vocational education.

A positive attitude toward vocational education is possessed by students whose fathers are craftsmen, foremen, and operatives and are most likely to enroll in vocational education. The least likely to enroll are the students whose fathers are managers, professionals, technicians, and salesmen.

Belief 5. There is no significant difference in the educational level obtained by parents and the students' attitudes toward vocational education.

A majority of the students whose fathers had obtained a high school education or less, possessed a positive attitude toward and would enroll in vocational education. After the parents had completed grade twelve and pursued higher levels of education, attitudes became more negative. The higher the educational level, the more negative the attitude toward vocational education.

Belief 6. There is no significant difference between the fathers', or head of household, income and students' attitudes toward vocational education.

The data revealed that a majority of the students whose fathers' incomes were less than $9,000 would enroll in vocational education if they had the opportunity. After income exceeds $9,000 the less likely the student would enroll.

RECOMMENDATIONS

The recommendations growing out of the analysis of data and conclusions in this research study are provided to give direction and to provide guidelines relative to improving attitudes of individuals or groups toward vocational education in specific, and education in general.

1. Plans should be developed for improving vocational offerings within the school.

2. Greater emphasis should be placed on the vocational guidance program in all grades.

3. Policy-makers should initiate plans to conduct master planning on a long-range basis for program change and improvement, utilizing citizens' groups such as Advisory Committees, Curriculum Committees, Parent/Teacher Associations, etc.

4. Techniques for improving communications between students, parents and school officials should be considered.

5. The policy-makers should review the allocation of resources: staff, facilities, equipment, and finance relative to future planning for educational program change.

6. The Delta/Montrose area schools should consider the employment of a full-time administrator to devote his energies to, and provide leadership for, the expansion of vocational education on the secondary, postsecondary, and adult levels in the form of an Area Vocational School.

7. Greater emphasis should be given to implementing cooperative education programs in the area.

8. Policy-makers should investigate the possibilities of expanding training opportunities with other public and private agencies in the communities.

9. An extensive public relations program should be initiated to improve the image and understanding by parents of the public school program.

10. School administrators should give consideration to evaluating the total educational program in terms of quantitative and qualitative criteria.

11. Vocational education personnel should design and implement programs that would attract students from the upper income families.

12. Vocational education personnel should utilize parents who have had experience in vocational education, in planning, implementing, conducting, and evaluating programs.

13. Vocational education personnel should consider constructing plans to utilize blue-collar workers to promote dignity and worth in those occupations.

14. This study should be replicated in three years to assess changes resulting from the present study.

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CALENDINE, JERRY;FLEMING, MARGARET
JOB DEVELOPMENT SERVICES (DPPF) EVALUATION, 1971-1972.

CLEVELAND PUBLIC SCHOOLS, OHIO. DIV. OF RESEARCH AND DEVELOPMENT.
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IDENTIFIERS - *JOB DEVELOPMENT SERVICES EVALUATION; CLEVELAND PUBLIC SCHOOLS

ABSTRACT - INVOLVED IN THIS EMPLOYMENT-ORIENTED PROGRAM FOR INNER-CITY HIGH SCHOOL STUDENTS WERE 12TH GRADERS FROM FOUR SENIOR HIGH SCHOOLS AND ONE SPECIAL OCCUPATIONAL SCHOOL WITH CONCENTRATIONS OF POVERTY RANGING FROM 54 TO 66 PERCENT. PARTICIPATION WAS CONTINGENT UPON PUPILS' DESIRES TO OBTAIN EMPLOYMENT AFTER GRADUATION. JOB PREPARATION CLASSES, COUNSELING SERVICES, FIELD TRIPS, JOB-INTERVIEW PRACTICE, AND COACHING WERE ENGAGED IN BY PARTICIPANTS. AN ANALYSIS OF PROJECT ACTIVITIES REVEALED THESE FINDINGS: (1) AS OF JUNE, 1963, 68 PERCENT OF THE PARTICIPANTS WERE PLACED ON JOBS WITHIN TWO MONTHS OF GRADUATION, (2) FIRST TIME INTERVIEWS TOTALLED 663, AND FOLLOW-UPS 898, (3) APPROXIMATELY 500 STUDENTS WERE GIVEN OPPORTUNITIES TO EXPLORE ACTUAL EMPLOYMENT SITUATIONS, AND (4) JOB-SEEKING GRADUATES' WEAKNESSES BY AND LARGE WERE IN THE AREAS OF MATHEMATICS AND COMMUNICATION. (SN)

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JOB DEVELOPMENT SERVICES

DPPF

EVALUATION

Fund #97--Component 14

1971-1972

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Division of Research and Development

August, 1972

UF018565

JOB DEVELOPMENT SERVICE

I. INTRODUCTION

A. Needs and Rationale

Many obstacles stand between the inner-city high school student and his desire to find full time employment after graduation. Among these obstacles are the following:

- Little knowledge of available jobs
- Limited contact with potential employers
- Little knowledge of employment obligations, requirements
- Lack of job-application skills and interview behavior
- Little actual work-training or experience
- Little understanding of career opportunities versus "getting a job "

Inner-city high school graduates have faced particular difficulty in finding employment during the economic slow-down. Combined with a shrinking job market, the problems above greatly reduce the opportunities of recent high school graduates to successfully obtain employment.

An employment-oriented program for work-bound graduates improves their opportunities for successful transition into the labor force. It encourages students to develop habits and skills that increase their desirability among prospective employers and brings to the attention of local employers the reserve of trainable high school graduates within the city of Cleveland.

Job Development Service provides special activities designed to achieve the following objectives:

1. To increase student knowledge of employment opportunities and procedures

2. To strengthen employment opportunities for students of inner-city high schools.

3. To identify jobs available with local employers and refer students for job interviews.

B. Historical Background

Since the 1966-67 school year, approximately 9,529 graduates of five inner-city senior high schools have had an opportunity to participate in a job placement program conducted by the Cleveland Public Schools Job Development Service. Of those students who demonstrated interest in post graduation employment, 95 per cent (4,861) obtained full time jobs. Participants were served by project activities that included job preparation classes, counseling services, field trips to plants, and job-interview coaching.

C. Summary of Operations

Twelfth grade students who indicated plans to search for full time employment after graduation were identified (see "Senior Information Form" Appendix A) for project participation. These students were located in five senior high schools with concentrations of poverty ranging from 54 to 66 per cent. Numbers of participants (1971-1972 school year) are as follows:

East High	135
East Technical	300
Glenville	300
John Hay	246
Thomas Edison	62
TOTAL	1,043

Total project expenditure (Funds encumbered as of 8/31/72) is $101,924.56 or $97.72 per student.

D. Questions To Be Answered By Evaluation:

1. What project activities are conducted to prepare students for post graduation employment?

2. How many students participated in various project activities?

3. What local business, industry, and civic resources contributed support for project operation?

4. How successful is the graduate placement program to date?

5. What special difficulties or problems have been encountered in the operational activities of Job Development?

II. HIGHLIGHTS OF FINDINGS

A. Summary of Key Findings

1. Despite lengthy lists of workers who have been laid off and must be absorbed before many companies can consider hiring new employees, the Job Development Service has achieved a job-placement rate (to date) of 68% for Cleveland High School graduates available for employment. Four-hundred and five graduates have obtained jobs (See appendix B).

2. Thirty-one companies participated in the Spring Job Center, enabling 663 seniors to be interviewed an average of 3.08 times each. Eight-hundred and ninety-eight follow-up (second) interviews (1.35 per senior) were generated by the initial Job Center interviews (see appendix C).

3. Weaknesses of Job-seeking graduates, as indicated by employer-representative interview records, are communication skills and math skills (see appendix D).

4. Approximately 520 students were taken on field trips to observe first-hand possible employment sites (see appendix E).

5. Success of the Cleveland Public Schools Job Development Project has been nationally recognized (see appendix F); requests for information about the project have originated from the following communities:

Valdosta, Georgia	*Atlanta, Georgia
New Bern, North Carolina	Houston, Texas
Clio, Michigan	*Minneapolis, Minnesota
Hamlin, West Virginia	Province of New Brunswick
Oakland, California	Albany, New York
Dayton, Ohio	*Little Rock, Arkansas
*Columbus, Ohio	*Pittsburgh, Pennsylvania
Austin, Texas	Toledo, Ohio
*Flint, Michigan	*Washington, D.C.

(* Denotes personal inspection visits)

B. Implications and Recommendations

The job-shortage difficulty of high school graduates may not disappear for some time. The demand for labor will likely lag behind the

time needed to clear away current economic uncertainties. Also, the impact of the state corporate tax (4-8%) has not been felt; it may accelerate the exodus of jobs from the central city and precipitate whole industry moves to low-tax states. The net result may be fewer jobs for Cleveland Public School graduates and a rise in the numbers on public assistance.

Student communication and mathematics skills that employers identify as essential to employment acceptability suggest the need for the five project schools to re-examine the quality of their instructional program, particularly for work-bound seniors. Employers are demanding basic skills for starting positions and many indicate preference for graduates with more advanced skills that guarantee promotions and successful apprenticeship training.

III. PROJECT DESCRIPTION

A. Participant Characteristics

Students participating in this project were disadvantaged twelfth graders in four senior highs and one special occupational school. Schools selected as project sites contain large concentrations of children whose families are receiving some form of public assistance. The table below identifies the project schools and percents of school enrollment on welfare (the poverty rate).

TABLE II

Participating Schools and Poverty Rate

1971 - 72

	Percent
East High	66
East Technical	64
Glenville	36
John Hay	46
Thomas Edison Occupational	54

Many of these children are not motivated to achieve in school because they lack understanding of the relationship between school achievement and employment opportunities. Their school performance, attendance and participation have generally been below average.

B. Project Operations

Organizational Details and Activities

Twelfth grade students who indicated their desire to obtain employment after graduation received special counseling, occupational information, and job-placement services through the Job Development Project. Guidance counselors were responsible for organizing and im-

plementing these services. Assisting the guidance counselors, occupational advisors were able to obtain commitments from local industry representatives, plan meaningful occupation-related field trips, and identify occupational information resources. Local industries were urged to send personnel recruiting representatives to school or Job Center sites for the purpose of interviewing and identifying potential full-time employees. Other company representatives participated in simulated job interviews during job preparation classes to give students the "feel" of real interview situations. Students were taken on field trips to local industries to acquaint them with possible future employers and types of occupations available.

Project Planning

An advisory board composed of a cross-section of local employers from such areas of the economic community as banking, government, industry, hospitals, retailing outlets, and utilities, along with the Occupational Planning Committee of the Cleveland Welfare Federation, assisted project planning and implementation efforts.

General Procedures

Seniors in the five project schools provide information about their post graduation plans on "Senior Information Forms" (see appendix A). These forms enable counselors to determine which seniors are job-bound. These students become enrolled in job preparation classes that utilize guest speakers and visiting representatives from industry (see lists, appendices G and H) as well as a special curriculum guide of the Cleveland Public Schools. Various topics are covered in the classes (see films, filmstrips--appendix I), including personal behavior,

grooming, dress, etc. Demonstration interviews (with real employer recruiting personnel) are conducted for classes to observe and critique. Field trips to potential employment sites add another dimension of job awareness to the preparation classes (see appendix E).

Throughout the year, the project manager is actively seeking job openings (see sample letter, appendix J) and recording available jobs on a "job order" form (see appendix K); occupational advisers in each school can then match job orders to students and arrange interview schedules. Each spring a Job Center brings together graduating seniors and recruiting representatives (see appendices C and L).

Staffing

1 Staff Assistant (Manager)

4 Full-time Occupational Advisers

5 Part-time Guidance Counselors

6 Clerks

IV. EVALUATION

Presentation of Findings

Question 1:

What project activities are conducted to prepare students for post graduation employment?

. See section III-B, "Project Operations"

Question 2:

How many students participated in various project activities?

. Project Participation--See appendix B

. Job Center Participation-- See appendix C

. Field Trip Participation--See appendix E

Question 3:

What local business, industry, and civic resources contributed support for project operation?

- Guest Speakers--See appendix H
- Visiting Representatives--See appendix G
- Participating Companies, Spring Job Center--See appendix C
- Field Trip Locations--See appendix E

Question 4:

How successful is the graduate placement program to date?

- Summary, 1971 - 72 school year--See appendix B
- Five Year Summary--See appendix F

Question 5:

What special difficulties or problems have been encountered in the operational activities of Job Development?

- Lack of student skills--See appendix D
- A sluggish economy that must absorb laid-off workers before new employees will be in demand
- A movement of industry away from the central city

V. CONCLUSIONS AND RECOMMENDATIONS

A. Discussion of Results

Despite an economy with weak demand for unskilled labor, the Job Development Service has placed 68% of the June 1972 project school graduates within two months of graduation; their total earnings for one year is estimated to be $1,877,633. As in the past, efforts to place graduates will continue into the Fall; the five year summary (appendix F) illustrates how continued efforts can successfully employ as many as 94%.

Testimony to the success of Job Development Service (aside

from a remarkable 94% placement rate) is the fact that OEO replicated a model for a "Schools-To-Industry Placement Program" (a demonstration grant to the National Urban League) upon the Cleveland Public Schools Job Development Project. The subsequent publicity has resulted in many inquiries (see list, "Summary of Key Findings," Section II-A) from communities seeking to establish similar programs for their graduates.

B. Recommendations

Joint ventures at the local level, involving business, industry, civic and educational institutions, can mount successful programs that zero-in on social problems. However, in this case--unemployed out-of-school youths--future project success may depend upon the ability of local leaders to formulate policies to

1. adequately prepare graduates with needed mathematics and communication skills.
2. stem the tide of industry closings and relocation.

Job Development

1971-- 72

List of Appendices

Appendix A	Senior Information Form
Appendix B	Summary of Student Participation
Appendix C	Spring Job Center Data
Appendix D	Rating of Students by Prospective Employers
Appendix E	Field Trip Summary
Appendix F	Manpower Information Service, Recognition of Job Development
Appendix G	Summary of Visiting Representatives
Appendix H	Summary of Guest Speakers
Appendix I	Job Preparation Class--Films, Filmstrips
Appendix J	Sample Industry Contact Letter
Appendix K	Sample Job Order File Card
Appendix L	Spring Job Center Schedule

SENIOR INFORMATION FORM

Date _____

Name _____ Birth Date _____
Last First Middle

School _____ Homeroom No. _____ Teacher _____

Class of _____ Home Address _____ 441) Phone _____

Neighbor's Phone _____ Social Security No. _____ Height _____ Weight _____

Live with Parents ____ Guardian ____ Relatives ____ Drivers License Yes _____ No _____

Do you intend to go to college full time? Yes _____ When _____ No _____

If not going to college, type of work desired: _____

Type of vocational courses taken: _____

_____

_____

Hobbies or Interests _____

PREVIOUS EMPLOYMENT HISTORY

Employer	Job	From	To	Reason for leaving

Do not write below this line

DATES EMPLOYED

Employer	Job	From	To	Remarks

Form 1 (Over)

983

Appendix A

MAJOR COURSES

10th Grade Course	Mark	11th Grade Course	Mark	12th Grade Course	Mark

Attendance _____ Activities _____

COUNSELOR'S RECOMMENDATIONS _____

EMPLOYMENT INTERVIEWS

Date	Company	Contact	Job Opening	Results

COUNSELING RECORD

DATE: _____ _____

DATE: _____ _____

DATE: _____ _____

DATE: _____ _____

Appendix B

JOB DEVELOPMENT SERVICE

SUMMARY OF PARTICIPATION

School Year 1971-72

August 31, 1972

Job Development Center	Number Graduating	Number Not Continuing Post High School Education	Percent Not Continuing Post High School Education	Number Requiring Full-Time Jobs	Number Requiring Jobs Who Were Interviewed	Total Number of Interviews	Average Number of Interviews	Number Who Have Obtained Jobs	Percent Requiring Full-Time Jobs and Have Obtained Jobs
East High	278	129	46	115	115	600	5.2	66	57
East Technical	410	163	40	105	105	925	8.8	105	100
Glenville	514	251	49	225	225	950	4.2	140	62
John Hay	304	150	49	113	113	755	6.7	66	58
Thomas Edison	49	47	96	42	42	201	4.8	28	67
TOTAL	1555	740	48	600	600	3431	5.7	405	68

Appendix C

JOB DEVELOPMENT SERVICE
1971-72

Summary of Participation:

Spring Job Center
(April-May 1972)

	Number of Seniors In Center	Total Number of Interviews	Number Considered For Second Interviews
East Tech	120	454	163
East High	110	408	197
Glenville	209	597	276
John Hay	174	477	211
Thomas Edison	50	112	51
TOTAL	663	2,048	898

PARTICIPATING COMPANIES (31)

American Telephone and Telegraph
Addressograph Multigraph
Bamberger Reinthal
Bobbie Brooks, Inc.
Cleveland Electric Illuminating Co.
Cleveland Metropolitan General Hospital
Cleveland Trust Company
Diamond Shamrock
East Ohio Gas Co.
Euclid, Inc.
Federal Civil Service
Federal Reserve Bank
Ford Motor Company
Glidden-Durkee
Hoag-Wismar & Henderson
Jones & Laughlin Steel
May Company
National City Bank
Ohio Bell Telephone Co.
Picker Corporation
Progressive Insurance Co.
Republic Steel Corp.
Richman Brothers
Saga Foods
Sherwin-Williams Co.
Society National Bank
Sohio
Travelers Insurance
TRW, Inc. (Valve Division)
University Hospitals
Western Electric Company

Appendix D

Job Development Service

Student Interview Performance: A Rating

By Employment Representatives

April/May 1972 Job Center

Criterion	Percent of Students
How many well mannered?	97.4
How many appropriately dressed?	92.2
How many prepared for a good interview?	81.1
How many able to communicate well?	79.6
How many have the math necessary to qualify for your jobs?	65.5*

* Twenty-eight percent of interview records indicated an unwillingness to estimate (17%--not sure; 11%--no response).

Appendix E

JOB DEVELOPMENT SERVICE
1971-72

FIELD TRIP SUMMARY

Month	School	Number of Students	Location
October	East High	10	Western Electric
		12	Addressograph-Multigraph
	Glenville	9	Sun Electric Co.
November	John Hay	20	Shell Dealer Management
		20	Addressograph-Multigraph
	East	10	Addressograph-Multigraph
December	Glenville	30	General Electric Service Shop
		50	Metropolitan General Hospital
		50	Red Guard Grill
		50	Shaker Medical Center
	John Hay	30	Pepsi Cola Bottling Co.
		20	Union Commerce Bank
February	Glenville	15	Warner-Swasey Co.
		30	Federal Bureau of Investigation
	John Hay	27	Chevrolet (Motor Division)
	East Technical	20	Progressive Insurance Co.
March	John Hay	35	Federal Reserve Bank
		20	St. Luke's Hospital
	Glenville	6	Penton Publishing Co.
		11	Fisher Body (GM)
April	Glenville	45	Hammermill Paper Co. (Erie, Pennsylvania)

MANPOWER INFORMATION SERVICE

A biweekly review of manpower developments by Stanley H. Ruttenberg & Associates, Inc.

May 10, 1972 THE BUREAU OF NATIONAL AFFAIRS, INC. Volume 3, Number 17

HIGHLIGHTS OF CURRENT REPORT

The income tax break for hiring WIN registrants gets underway, and the Labor Department announces a special 45-day test of the new tax credit in Hartford and Louisville. The so-called Job Development Tax Credit will allow employers to deduct from their income tax an amount equalling 20 percent of the wages paid to new hires coming from the WIN program. Labor Department officials say it will slash welfare rolls. Under the new Talmadge amendments, there will be [illegible] times as many registrants for jobs there are now. The Labor Department will publish guidelines [illegible] cedures for hiring WIN registrants, based partly on trial programs [illegible] ville.

The lack of reliable local manpower [illegible] hampers planning by state and [illegible] councils, the MIS Analysis [illegible] sumptions in new [illegible] no established methodology [illegible] power problems. Available [illegible] have long been [illegible] indications [illegible] ne[illegible]

Cleveland high schools have found jobs for 94 percent of their recent job-bound graduates under a model program to aid inner-city youth. With the cooperation of the local business community, the program represents a commitment on the part of the Cleveland Board of Education to prepare students for employment. MIS visits the Cleveland schools for this Case Study and reports that the program, now in its sixth year, has combined an employer interview day with job preparation classes and frequent counseling to aid inner-city students in entering the world of work. (Page 400)

[illegible]abor [illegible]orkers hope [illegible]ministration will [illegible] the Eco[illegible]. Meanwhile, [illegible]ave speedily passed [illegible] additional funds for the [illegible]ed Youth Corps summer program. [illegible]antial differences in the money bills are being resolved this week in conference committee. In another legislative development, a Senate committee met to put finishing touches on its bill boosting the minimum wage to $2.20 an hour. (Page 388)

[illegible]erv[illegible]ening serv[illegible]with community [illegible]d expand the [illegible]nd private [illegible]eady instructed the [illegible]ers to serve disabled vet[illegible] contacted businesses employing [illegible]ersons or more, urging them to list job openings with the ES whether or not they had previously been required by federal regulation to do so. (Page 390)

The Finance Committee unveils a "workfare" plan as a substitute for welfare payments under the pending welfare reform legislation. The workfare amendment would offer jobs instead of welfare benefits to AFDC families. If an able-bodied family head with no preschool children refused to accept a job, at $1.20 an hour, wel-

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Case Study
Public Schools

CLEVELAND SCHOOLS DEVELOP JOBS, PLACE WORK-BOUND INNER-CITY YOUTH

- **Job development is a year-round activity**
- **94 percent placement record for six years**
- **Cooperation of business community is key**
- **Model for OEO project in four other cities**

The persistently high unemployment rate among 16- to 19-year olds (17.3 percent in April) presents a serious challenge to the nation's education system. Educators, parents, manpower planners and administrators, and young people themselves frequently raise this important question: In addition to traditional academic and vocational programs, can and should schools do more for their job-bound students? The Board of Education of the public-school system in Cleveland, Ohio, answers this question with a strong affirmative, as demonstrated by the city's highly successful Job Development Service for inner-city high school students. Now in its sixth year of operation, the job development program represents a firm commitment by the Cleveland school system to better prepare its students for the world of work.

The Job Development Service, established in 1966 by the Cleveland Board of Education with federal funding under Title I of the Elementary and Secondary Education Act and now financed by the Ohio State Department of Education, provides a variety of services to assist inner-city high school students in finding gainful, fulltime employment after graduation. Going beyond the traditional functions of the high school, the program offers job development and placement services, vocational counseling, interviews with area businesses, orientation to the world of work, and referral to educational and training opportunities.

Responsibility for Job-Bound

"While high schools have long accepted as their responsibility the counseling and placement of those students who are headed for college after graduation, too often the schools have neglected the job-bound students." Charles A. McBride, the project manager of the Cleveland Job Development Service told MIS. McBride estimates that before the Job Development Service program began, only 15 percent of the city's public high school students who wanted to work upon graduation were able to find jobs. The Cleveland schools found that many students, faced with such poor prospects for employment, began to question the value of finishing high school. "For the potential dropout, for the student who is not continuing his formal education after high school, the key to his graduating is a good chance for a job," McBride feels. Through the Job Development Service, the Cleveland public schools actively and positively accept responsibility for providing training and employment opportunities for their job-bound, disadvantaged students.

On a recent visit to Glenville High School in Cleveland, MIS observed the culmination of this school year's job development program—a Job Center Day. Since September, school guidance counselors and job advisers have been counseling and coaching students, canvassing businesses for job openings, and recruiting employers to participate in Job Center Day. During the three Job Center Days held in April and May at Glenville and at four other high schools, personnel representatives from some 35 Cleveland businesses interview as many as 23 students a day for fulltime employment after graduation from high school. The schools that participate in the Job Development Service program are those inner-city high schools with the largest percentage of children from welfare families.

The placement program involves a wide range of businesses and industries—banking, retailing, manufacturing, construction, insurance, hospitals, electronics, and the federal civil service. In advance of Job Center Day the participating employers prepare a brief description of their business, the possible job openings, qualifications, and conditions of employment. Each school compiles these descriptions into a handbook for students to use in making job interview choices. Each student may schedule interviews with at least three different companies during Job Center Day. The program's counselors caution students not to expect a job offer from this first round of interviewing as on-the-spot hiring is rare. Most companies require further interviews and aptitude tests for prospective employees.

The Job Center Day handbook for Glenville High School contains descriptions of some 20 different job categories and possible employment openings with 24 Cleveland-area companies. Jobs for clerks, typists, machine operators, secretaries, and technicians appear most frequently in the handbook. Other positions include sales person, bookkeeper, nurses' aide, repairman, equipment installer, messenger, mechanic's helper, and building maintenanceman. Starting wages range from $1.70 to $3.30 an hour.

Job Preparation

Project manager McBride views Job Center Day as a preliminary step toward opening up job opportunities and as a valuable learning experience in job seeking for the students. Holding the interview at the high schools, on the students' home grounds, removes tension and fears and makes it easier for the students to

interview employers on their own, McBride commented. While Job Center Days take place in the spring prior to graduation and in August for summer school graduates, "job preparation" begins in September. At the beginning of the school year, seniors fill out an information form stating their interests, employment history, high school courses and grades, and their post-high school plans. This information, plus frequent consultations with students, enables counselors to identify job-bound students. Students interested in employment after graduation may enroll in "job preparation" classes which are designed to inform students about job seeking techniques and practices. In the classes, students practice taking employment tests and filling out application forms, and conduct mock interviews for jobs.

A handbook prepared by the Cleveland Board of Education serves as a curriculum guide for the job preparation classes. Recognizing that many inner-city youths miss out on job opportunities because of negative work attitudes and because they lack information about employment, the handbook covers all aspects of job seeking—filling out application forms; proper dress and conduct for interviews; and documents for employment such as work permits, Social Security card, birth certificate, and health records. The handbook also discusses how to use classified ads and employment agencies to find a job; what to look for in a job; and the obligations and responsibilities of employment.

Emphasizing exposure to the world of work, the job development program arranges tours of local companies and invites business representatives to speak to classes to acquaint students with the business world and the nature of various jobs. During the current school year, with the assistance of the Cleveland Growth Board of the Chamber of Commerce, the program provided tours of almost 100 businesses for inner-city junior high students. McBride feels that it is important for job preparation to begin early in the educational process so that students will know well in advance of graduation from high school what job requirements they must fill and what opportunities will be available to them.

Job Development Is Key

Essential to the success of the Job Development Service is the availability of jobs—jobs that are suited to the needs and abilities of disadvantaged, inner-city high school students. Project manager McBride and a job adviser from each of the five high schools have the major responsibility for developing employment opportunities for their job-bound graduates. In order to provide enough job opportunities for all interested students, job development must be a year-round activity. The job developers keep in close contact with potential employers. When an employer has a job opening, he sends to the job development staff a job order describing the position—salary, hours, conditions of work, etc. The job advisers and school counselors are responsible for matching interested, qualified students with available jobs. After an initial training program to acquaint counselors with the world of business (through lectures by business representatives and tours of local companies) and after six years of experience in the job development program, McBride feels that his staff are very knowledgeable about the business world and are well qualified for their job development and placement work. (Due to limited funds the orientation-to-business training program for counselors was dropped after the first year of the program.)

While it may take many months to find jobs for all interested students, the placement rate for the Job Development Service has averaged 94 percent during its six years of operation. ("In a good year, all placements for a June graduating class are made by the following October," McBride noted.) As the program does not include follow-up activities for those persons placed in jobs, there is little data available on the work histories or retention rates of placements. One survey taken by the Cleveland Board of Education showed an attrition rate of 18 percent. The Board of Education reports that total state and federal expenditures on the Job Development Service from September 1966 to October 1971 amounted to $328,899, or an average of $68 per graduate placed in a job. According to a report of the board, the cost factor of the program compared to the earnings of the graduates has amounted to .6 percent. "This does not, of course, take into account the plus factor of taking this group off the relief rolls and making them self-supporting," the report states. "Perhaps the biggest factor is giving them (the graduates) self-respect."

Cooperation from Business

Project manager McBride feels that the Cleveland business community has been very receptive to the Job development program. This interest has been demonstrated by business contributions to the program such as instructional materials and tours of businesses and industries, and by the employers' participation in Job Center Days. "This is not a make-work project," commented McBride; "the key to the project's success is real jobs." Even though a number of employers told MIS that they had no jobs to offer on Job Center Day (Reasons cited were hiring freezes and cutbacks and general economic conditions), they expressed an interest in hiring qualified high school graduates. Pointing to the program's past placement record, McBride was hopeful that job opportunities will develop, even though some graduates may not be placed until the fall. "With patience and continued job development efforts by program staff and by the students themselves, we hope to maintain or even exceed our past placement record," he said.

Despite the impressively high placement record of 95 percent, Cleveland's job development program for inner-city youths faces some difficulties. The relocation of many businesses away from the area has meant a loss of jobs. Until this year, limited funds have prevented any follow-up services for graduates placed in

jobs. In a current pilot project at one school, job advisers and counselors are maintaining contacts with graduates placed in jobs and with their employers. Employers have been asked to make periodic evaluations of their new workers. Through these follow-up activities the program staffers can provide continued job counseling for the newly employed graduates and can gain insights into how to improve the placement program. "A good sign of the program's usefulness," McBride points out, "is that many graduates, who are once again in the job market, are returning for advice and help in finding another job."

Model for OEO Project

The Cleveland Job Development Service has received many inquiries from school systems and community groups about setting up a job development program. One inquiry, from the Office of Economic Opportunity (OEO), has led to the replication of the Cleveland program in four other cities—Atlanta, Pittsburgh, Minneapolis, and Washington, D.C. Under an OEO demonstration grant to the National Urban League, the league and the school boards of the four cities have established a "Schools-to-Industry Placement Program" for inner-city high school students which is modeled after the Cleveland program. William Batt of OEO's Manpower Branch of the Office of Program Development in Washington, D.C., reports that after the expiration of the OEO contract in September the four demonstration cities are adopting the schools-to-industry project as an on-going part of their educational and vocational programs. Batt feels that "the cooperation of the business community and the inner-city schools in order to open up job opportunities for disadvantaged youth is enormously essential and possible." He noted that funding is available under Title I of the Elementary and Secondary Education Act and under the Vocational Education Act.

As shown by the Cleveland job development program and by the OEO demonstration programs in four other cities there appears to be convincing evidence that school systems, working with employers, can better serve their job-bound students. □

Five Year Summary of Placements for Cleveland Job Development Service

Graduating Class	Number Graduating	Number Requiring Full-time Jobs	Percent Interested in Jobs	Number Accepting Jobs	Percent of Students Requiring Jobs Who Accepted Jobs	Placed to Date
January 1967	664	432	100%	404	93%	93
June 1967	1403	847	89	811	96	95
January 1968	773	494	88	436	88	94
June 1968	1361	763	83	727	95	94
January 1969	616	359	88	345	96	94
June 1969	1136	590	86	587	99	95
January 1970	547	328	87	321	98	96
June 1970	1076	488	82	469	96	95
January 1971	511	290	86	257	89	95
June 1971	1415	551	80	489	89	94
Totals		5142		4846		

Appendix G

JOB DEVELOPMENT CENTER
1971-72

SUMMARY OF VISITING REPRESENTATIVES

Month	Job Development Center	Employer Represented
November	East High	Ohio Bell Telephone Co. St. Vincent Charity Hospital U.S. Civil Service Commission Armed Services
	Glenville	Ohio Bell Telephone Co.
February	East High	International Business Machines Ohio Bell Telephone Co.
	East Technical	Ohio Bell Telephone Co. Armed Services
	John Hay	Joint Apprenticeship U.S. Civil Service Commission
March	East High	Central National Bank Polytech Consulting U.S. Civil Service Commission Ohio Bell Telephone Co. East Ohio Gas Co. Union Commerce Bank Eaton Corp.
	John Hay	TRW, Inc. Ohio Bell Telephone Co. U.S. Civil Service Commission
	Glenville	Addressograph-Multigraph Ohio Bell Telephone Co. U.S. Civil Service Commission

Appendix II

JOB DEVELOPMENT SERVICE
1971-72

GUEST SPEAKERS

Month	Job Development Center	Employer Represented
December	John Hay	Glidden-Durkee Co.
February	Glenville	Stouffer Foods Forest City Hospital United Airlines The May Company Glenville Auto Parts Electronics Engineering Institute TRW, Inc. Fisher Body Corp. Cleveland Trust Co.

Appendix I

JOB DEVELOPMENT SERVICE

FILMSTRIPS

1. World of Work w/Records
2. Work Habits & Attitudes w/Records
3. Failure-A Step Toward Growth - 60 FX
4. Your Future Through Technical Education - 14 YX
5. Getting and Keeping Your First Job - 33 GX
6. Dropping Out - Road to Nowhere - 17 DX
7. Telling Your Story on An Employment Application (Kit) - 4VX
   Your Job Interview (These two FS cannot be seperated)
8. Health Careers - 35 HX
9. Job Opportunities w/Records & Teacher's Guide (set of 6)
10. Job Attitudes

FILMS

1. Job Interview: Whom Would you Hire? Three Young Men
2. Your Job and Your Boss
3. New Horizins in Vocations - They Beat the Odds
4. Morning for Jimmy
5. Not with Empty Hands
6. Portrait of a Disadvantaged Child
7. Portrait of An Inner-City School
   A Place to Learn

Appendix J

CLEVELAND PUBLIC SCHOOLS

1380 East Sixth Street • Cleveland, Ohio, 44114 • Telephone 696-2929

PAUL W. BRIGGS
Superintendent

SAMPLE

The Job Development Service of the Cleveland Board of Education is concentrated on the five inner-city high schools: East High, East Tech, Glenville, John Hay and Thomas A. Edison. Its purpose is to find full time permanent employment for the graduates of these schools who are not going on to college. To be eligible for the program, the senior must have graduated.

The five years the program has been in operation, of 5,139 graduates requiring full time employment, 4,861 obtained full time employment or 95%. This has done three things. It has given an objective to not becoming a drop out--it has taken hundreds of families off relief with millions of dollars of earned income, and it has cleared the inner-city streets of 4,800 potentially frustrated youth.

We are in trouble with our June, 1972 class. While we have many companies, both large and small who regularly employ our graduates, they cannot absorb the entire class. We cannot afford to let these graduates roam the streets--we must put their skills and education to work. We are asking your help. We know business is bad, but somewhere in your organization one or two entry-level openings will occur in the next month or two. When it does, give one of these graduates a chance. These graduates have had training in everything from typing to welding. They are not asking for charity or a make-work project, but for an opportunity to become a member of your concern.

Call us at 229-9383, and give us your requirements.

Sincerely yours,

Kenneth Dukes
Job Advisor
Job Development Service

KD
pr

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Appendix K

Job Development Service

1971-72

Job Order File Card

997

- 24 -

JOB ORDER — Job Placement

DATE _____ 196__

COMPANY _____ ADDRESS _____ 441 _____

PHONE _____ CONTACT M _____ TITLE _____

JOB TITLE _____ NO. _____ M _____ F _____ Starting Rate $ _____ Hours _____

DUTIES _____

EDUCATIONAL REQUIREMENTS: _____

SPECIAL PHYSICAL REQUIREMENTS: _____

CO. BENEFITS:	Tuition refund—Yes No %	REFERRALS:
BLUE CROSS:	Yes No	
PENSION PLAN		
VACATION POLICY		
OTHER		
CO. LITERATURE		

FORM 3

Appendix L

JOB DEVELOPMENT SERVICE

EMPLOYER _____

WEDNESDAY APRIL 19	THURSDAY APRIL 20	WEDNESDAY APRIL 26	THURSDAY APRIL 27	TUESDAY MAY 2	WEDNESDAY MAY 3	THURSDAY MAY 4	FRIDAY MAY 5	WEDNESDAY MAY 10	THURSDAY MAY 11	FRIDAY MAY 12
EAST TECHNICAL 2470 East 55th St. Interviews in Library on second floor 15 minute interviews starting at 8:45 a.m. Luncheon Period 12:00 to 1:00 Lunch in school tearoom. Host, Mr. Smith, Principal. Last interview 3:15 to 3:30 PARKING: Reserved parding at north end of building at traffic light. Entrance will be blocked. Identify yourself.		EAST HIGH 1380 East 82nd St. Interviews in the Library 15 minute interviews starting at 8:45 a.m. Luncheon Period 12:00 to 1:00 Lunch in teachers' lunchroom as guest of Mr. Pryor, Principal. Last interview 3:15 to 3:30 PARKING: Enter parking area at south end of school building off Decker Avenue. Decker is now one way. Approach it from East 81st Street.		GLENVILLE 650 East 113th Street Interviews in Room 102 & 103A 15 minute interviews starting at 8:45 a.m. Luncheon Period 12:00 to 1:00 Lunch in tearoom with Mr. Clayton, Principal Last interview 3:45 to 4:00 PARKING: Reserved parking area at north end of building.			THOMAS A. EDISON 7101 Hough Ave. Interviews in the Library 15 minute interviews starting at 9:00 a.m. Last interview 11:30 to 11:45 PARKING: Enter driveway on 71st Street side of the school. Turn left at top of drive and park next to the greenhouse.	JOHN HAY 2075 East 107th St. Interviews in the Library 15 minute interviews starting at 8:45 a.m. Luncheon Period 12:00 to 1:00 Lunch will be served in the school tearoom as guest of Mr. Seldon, Principal Last interview 3:15 to 3:30 PARKING: Go south on 107th from Chester or Euclid. Turn left on Deering, first street past Euclid. Go in driveway immediately in back of school.		ADULT ED. (Observation) 2064 Sterns Road Interviews in the Library 15 minute interviews starting at 8:45 a.m. PARKING: Enter parking area from East 109th Street in back of John Hay.

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VT 018 714

VT 018 714
TENNESSEE EMPLOYMENT OUTLOOK REGIONAL ESTIMATES FOR OCCUPATIONS, 1969-1975. PART II.

TENNESSEE DEPT. OF EMPLOYMENT SECURITY, NASHVILLE. RESEARCH AND STATISTICS SECTION.; MEMPHIS STATE UNIV., TENN. CENTER FOR MANPOWER STUDIES.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - NOV72 51P.

DESCRIPTORS - *EMPLOYMENT PROJECTIONS; EMPLOYMENT TRENDS; *OCCUPATIONAL SURVEYS; *LABOR MARKET; *DEMAND OCCUPATIONS; *MANPOWER NEEDS; GEOGRAPHIC REGIONS; METROPOLITAN AREAS; REGIONAL PLANNING; VOCATIONAL EDUCATION
IDENTIFIERS - *TENNESSEE

ABSTRACT - THIS REPORT ON TENNESSEE'S PROJECTED MANPOWER NEEDS PRESENTS ESTIMATES OF PRESENT AND PROJECTED EMPLOYMENT ON A REGIONAL BASIS FOR THE NINE TENNESSEE PLANNING AND DEVELOPMENT DISTRICTS AND THE FOUR STANDARD METROPOLITAN STATISTICAL AREAS. IT WAS FELT THAT ANALYSIS AT THE REGIONAL LEVEL WOULD ALLOW MORE EFFECTIVE UTILIZATION OF THE FINDINGS IN PLANNING PROGRAM OFFERINGS AT AREA VOCATIONAL AND TECHNICAL SCHOOLS. MANPOWER NEED PROJECTIONS ARE STATED IN TERMS OF POTENTIAL JOB OFFERINGS IN EACH OCCUPATION FOR THE 1969-1975 PERIOD IN EACH DISTRICT. A RELATED DOCUMENT IS AVAILABLE AS VT 017 631 (ARM VOL. 6, NO. 2). (MF)

TENNESSEE EMPLOYMENT OUTLOOK

REGIONAL ESTIMATES FOR OCCUPATIONS

1969 - 1975

VT018714

1000

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TENNESSEE EMPLOYMENT OUTLOOK
REGIONAL ESTIMATES FOR OCCUPATIONS
1969-1975

PART II

State of Tennessee
Winfield Dunn
Governor

Prepared By

Department of Employment Security
Research and Statistics Section
Earnest Griggs
Commissioner

Center for Manpower Studies
Memphis State University
William R. Schriver, Director

November 1972

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FOREWORD

Part I of the Tennessee Employment Outlook reported estimates of present and projected employment for industries and occupations on a statewide basis. Part II breaks down the occupational estimates and projections on a regional basis.

It is felt that analysis at the regional level will allow a much more effective utilization of the findings, for it is at this level that occupational demand may be integrated into program offerings at area vocational-technical schools and technical institutes. Hopefully, the data and analysis reported here will also be useful to local public school systems and proprietary schools. In order to maximize the returns from job-oriented educational programs, both professional and subprofessional, to the recipient and to society, the program's output should ideally be a function of present and anticipated demand for the output in local labor markets and, to some extent, demand in national labor markets for professional and managerial occupations. Hopefully this report will offer some guidance to the solution of a very complicated problem in educational planning, albeit an imperfect solution.

To facilitate gains from continuity with other planning studies, the nine Tennessee Planning and Development Districts and the four Standard Metropolitan Statistical Areas were selected as geographic units of analysis. Analysis at the county level was felt to be indefensible due to the chance of encountering large estimating errors when dealing with small geographic units.

This study, as did Part I, represents a major joint effort between the Center for Manpower Studies at Memphis State University and the Research and Statistics Section of the Tennessee Department of Employment Security. The work was performed primarily by the staffs of these two organizations: William R. Schriver, director, Robert R. McCormick, research assistant, Ormond C. Corry, contributing consultant, at the Center for Manpower Studies; Beatrice Hubbard and John E. Moore, statisticians in the Research and Statistics Section.

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The second part of the report on projected manpower needs by occupation in Tennessee is designed (1) to relate the statewide projections of employment changes by occupation and the number of jobs to be filled during the 1969-1975 period to development districts, and (2) to indicate the relevance of the projections to vocational-technical education program planning and administration. Of course the value of the projections is not limited to vocational education, but the specific job-orientation nature of vocational education makes any clue to future trends or developments very important to this component of the educational system.

More than 30 Federal, State, and locally sponsored manpower development programs are being carried out in Tennessee. Many of them are of short term and in the fields of basic and remedial education. In the public vocational education system there are overlaps as to educational development and specific training levels between the high schools, post-secondary (area) vocational schools, the adult programs, the technical institutes, the 2-year community colleges, and the certificate and associate degree programs of the 4-year colleges. The potential job openings in many occupations are up for grabs also by labor force entrants with no specific vocational preparation, with training in less skilled occupations or as apprentices, or with business college, technical institute or other private school training.

The persisting questions in public vocational education are where the schools should be located, what subjects or training courses they should offer, and what relative resources should be committed to

each school and subject field. Useful answers to these questions cannot be found in job opening projections or any other array of data except in relative, largely subjective terms. The schools' enrollment and course completion data in each subject field can be compared with the projected job openings by appropriate occupational category. Thus, useful answers can be found over time through developing ratios of the schools' output at each level of secondary, post-secondary and technical institute instruction with the projected openings on a continuing basis. However, this would not account for other important skill supply sources such as proprietary schools, armed forces training, and, more importantly, formal and informal OJT programs.

The manpower need projections are stated in terms of the potential job openings in each occupation. They account for the varying growth trends in employment by industry and the shifts in relative importance of occupations in those industries. They also account for the number of workers who may be expected to die or retire during the projection period. The State's vocational-technical education system has now been established and expanded sufficiently for it to start providing the course completion and other data records by occupational field and area within the State for use as measures of the extent to which the schools are meeting or exceeding the projected job openings--for a matching of this contribution to the supply of workers with the demand for workers. These demand/supply ratios will be developed and reported in a subsequent study.

Development Districts as Appropriate Areas for Data Comparisons

In contrast to the more mobile college graduates, most students completing courses in the vocational-technical schools seek their initial

jobs in their local labor market or nearby area. Professional and technical "specialization" is the term commonly applied to the vocational courses at the 4-year baccalaureate or higher degree level. Vocational-technical education below the baccalaureate level places greater emphasis on the knowledge and especially skills applicable to specific occupational areas at the initial employment or labor force entry level, i.e., skill specificity as opposed to skill generality. Job orientation is the distinguishing characteristic of vocational education. The success of a vocational technical education as a publicly sponsored program is measured by the student's gaining employment in his specialized field. "Basic education" courses are included in the schools only to the extent that they are needed as prerequisites to the vocational studies.

The nine officially designated State planning regions and development districts in Tennessee are appropriate representations of the local markets for the vocational schools' new entrants into the labor force. The districts may have no special status in the schools' administrative organization, but their labor market aspects are relevant to the demand for the graduates.

The State total occupational data projections included in Part I of this report have been allocated to the development districts to reveal intra-state variations in employment trends and provide the projected job openings in more appropriate form for comparison with the vocational school data. The projections for the four districts with Standard Metropolitan Statistical Areas (SMSAs) have also been distributed between the metropolitan (SMSA) counties and the non-metropolitan counties. Obviously these allocated projections are subject to a larger chance of

error than the aggregates in the State totals. Even the methods used in developing the statewide projections are best applied on a national basis. The district and SMSA allocations were made through use of local or county group variations in the historical trends in the source data.

Only the 35 principal occupational groups of those included in the State total projections have been allocated to the development districts and SMSAs. These allocated data are included in the appendix tables separately for each district and SMSA. The comparative annual average job openings by district for the 35 principal groups are included in test tables 5 and 6. However, condensed data for the nine major occupational divisions have been used in the first four tables for convenience in emphasizing the differences between districts and SMSAs in employment and job opening trends over the 1969-1975 projection period.

The Tennessee regional planning and development districts (DD) are shown in the following list. Their names and the counties included in each are as follows:

First Tennessee-Virginia DD
Non-metropolitan counties: Carter, Greene, Hancock, Hawkins, Johnson, Sullivan, Unicoi and Washington. (Washington County, Virginia, and the independent city of Bristol, Virginia, are in the district, but the Virginia data are not included in this report.)

East Tennessee DD
Metropolitan counties: Anderson, Blount and Knox. (Knoxville SMSA)
Non-metropolitan counties: Campbell, Claiborne, Cocke, Grainger, Jefferson, Hamblen, Loudon, Monroe, Morgan, Roane, Union, Scott, and Sevier.

Southeast DD
Metropolitan counties: Hamilton. (Chattanooga SMSA)
Non-metropolitan counties: Bledsoe, Bradley, Grundy, McMinn, Marion, Meigs, Polk, Rhea and Sequatchie.

Upper Cumberland DD
Non-metropolitan counties: Cannon, Clay, Cumberland, DeKalb, Fentress, Jackson, Macon, Overton, Pickett, Putnam, Smith, Van Buren, Warren and White.

South Central Tennessee DD
Non-metropolitan counties: Bedford, Coffee, Franklin, Giles, Hickman, Lawrence, Lewis, Lincoln, Marshall, Maury, Moore, Perry and Wayne.

Mid-Cumberland Council of Governments (Nashville-Davidson SMSA)
Metropolitan counties: Davidson, Sumner and Wilson.
Non-metropolitan counties: Cheatham, Dickson, Houston, Humphreys, Montgomery, Robertson, Rutherford, Trousdale, Stewart, and Williamson.

Southwest Tennessee DD *
Non-metropolitan counties: Chester, Decatur, Hardin, Hardeman, Haywood, Henderson, McNairy and Madison.

Northwest Tennessee DD
Non-metropolitan counties: Benton, Carroll, Crockett, Dyer, Gibson, Henry, Lake, Obion and Weakley.

Memphis-Delta DD *
Metropolitan counties: Shelby. (Memphis SMSA)
Non-metropolitan counties: Fayette, Lauderdale and Tipton.

Employment Trends to 1975 by Occupation and District

The estimated 1969 and projected 1975 employment in the nine occupational divisions by development district are shown in panels A and B of Table 1. The differences, or changes between 1969 and 1975, for each occupation and district number are expressed as percentage of the 1969 employment number in panel C. In panel D the State total percentage distributions of the changes by district are shown. In Table 2 the same analytical arrangement is applied to the districts with SMSAs to indicate the contrasts between the metropolitan and non-metropolitan portions of the districts.

The four development districts with total employment expansion percentages projected to exceed the State total percentage for the 1969-1975 period are the ones which include the State's metropolitan counties, as is shown in the first row of panel C of Table 1. The influence of projected large decreases in employment relative to other changes in the last two of the occupational groups listed, "laborers except farm and mine," and "farmers and farm workers," is reflected in the change total percentages for the more rural districts, markedly so for the South Central Development District. The percentage distribution data for the "laborers except farm and mine" group have been omitted in panel D because the offsetting plus and minus change values for the districts yield meaningless percentages of the net State total.

The "professional, technical and kindred workers" group is projected to have the largest relative change of all the groups in each district. However, it is significant that the four occupational groups to which vocational-technical education is most applicable have above average relative expansion projected for the State and all the districts

TABLE 1. TOTAL EMPLOYMENT BY DEVELOPMENT DISTRICT AND OCCUPATIONAL GROUP: TENNESSEE, 1969 AND 1975, WITH % CHANGES AND % DISTRIBUTION OF CHANGES

Major Occupation Group	State Total	Regional State Planning and Development Districts								
		First Tennessee	East Tennessee	Southeast	Upper Cumberland	Mid-Cumberland	South Central	North-West	South-West	Memphis Delta
		A. Employment in 1969--Estimated								
Total	1,608,141	149,776	256,654	201,278	66,295	350,700	104,545	85,517	61,515	331,860
Professional, Technical & Kindred	180,273	13,000	29,376	21,503	6,710	44,845	10,733	6,133	7,140	40,833
Managers, Officials & Proprietors	118,116	10,110	18,785	14,770	3,413	27,010	6,273	5,005	3,770	28,980
Clerical & Kindred Workers	224,428	20,615	33,844	29,154	7,712	51,632	13,025	9,630	7,220	51,596
Sales Workers	107,614	9,008	17,068	13,513	2 675	25,630	4,656	4,086	3,348	27,630
Craftsmen, Foremen & Kindred	225,339	25,066	35,854	30,572	7,830	48,360	13,073	11,532	7,182	45,870
Operatives & Kindred Workers	381,927	39,076	64,375	55,254	16,944	73,284	27,995	25,737	14,245	65,017
Service Workers	184,508	13,915	31,270	21,972	6,032	43,807	110,670	6,200	5,002	45,640
Laborers, Except Farmers & Miners	80,321	8,106	12,562	10,100	3,249	16,612	5,870	44,094	2,833	16,894
Farmers & Farm Workers	105,615	10,880	13,520	4,440	11,730	19,520	12,250	13,100	10,775	9,400

TABLE 1 (continued):

Major Occupation Group	State Total	Regional State Planning and Development Districts								
		First Tennessee	East Tennessee	Southeast	Upper Cumberland	Mid-Cumberland	South Central	North-West	South-West	Memphis Delta
B. Employment in 1975--Projected										
Total	1,745,766	160,510	278,856	218,827	79,586	394,955	106,335	89,441	64,566	362,690
Professional, Technical & Kindred	213,247	15,280	34,080	24,192	7,824	55,870	11,865	6,960	8,326	48,850
Managers, Officials & Proprietors	128,147	10,820	20,360	16,012	3,720	29,980	6,650	5,398	4,077	31,130
Clerical & Kindred Workers	254,362	22,920	38,400	32,865	8,700	60,124	13,775	10,837	8,177	58,564
Sales Workers	119,662	9,845	19,057	15,046	2,996	28,683	5,010	4,550	3,720	30,755
Craftsmen, Foremen & Kindred	251,961	27,943	40,792	34,604	8,857	55,890	13,970	13,033	8,124	48,748
Operatives & Kindred Workers	411,520	41,928	9,506	58,855	18,552	79,708	29,430	27,688	15,390	70,463
Service Workers	204,670	15,190	33,766	24,113	6,704	51,180	11,690	6,730	5,522	49,775
Laborers Except Farmers & Miners	78,472	7,964	12,175	9,630	2,943	18,030	4,225	3,865	2,700	16,940
Farmers & Farm Workers	83,725	8,620	10,720	3,510	9,290	15,490	9,720	10,380	8,530	7,465

TABLE 1 (continued):

Major Occupation Group	State Total	Regional State Planning and Development Districts: First Tennessee	East Tennessee	Southeast	Upper Cumberland	Mid-Cumberland	South Central	North-West	South-West	Memphis Delta
C. 1969-1975 Change as % of 1969 Employment										
Total	8.56	7.17	8.65	8.72	4.96	12.62	1.71	4.59	4.83	9.29
Professional, Technical & Kindred	18.29	17.54	16.01	12.51	16.60	24.58	10.55	13.48	16.61	19.63
Managers, Officials & Proprietors	8.49	7.02	8.38	8.41	9.00	11.00	6.01	7.85	8.14	7.42
Clerical & Kindred Workers	13.34	11.18	13.46	12.73	12.81	16.45	5.76	12.53	13.25	13.50
Sales Workers	11.20	9.29	11.65	11.34	12.00	11.91	7.60	11.36	11.11	11.31
Craftsmen, Foremen & Kindred	11.81	11.48	13.77	13.19	13.12	15.57	6.86	13.02	13.12	6.27
Operatives & Kindred Workers	7.75	7.30	7.97	6.52	9.49	8.77	5.13	7.58	8.04	8.38
Service Workers	10.93	9.16	7.98	9.74	11.14	16.83	9.56	8.55	10.40	9.06
Laborers Except Farmers & Miners	-2.30	-1.75	-3.08	-4.65	-9.42	8.54	-28.02	-5.59	-4.69	0.27
Farmers & Farm Workers	-20.73	-20.77	-20.71	-20.95	-20.80	-20.65	-20.65	-20.76	-20.84	-20.58

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TABLE 1 (continued):

Major Occupation Group	State Total	Regional State Planning and Development Districts								
		First Tennessee	East Tennessee	Southeast	Upper Cumberland	Mid-Cumberland	South Central	North-West	South-West	Memphis Delta
		D. 1969-1975 Change as % of State Total Change								
Total	100.00	7.80	16.13	12.75	2.39	32.16	1.30	2.85	2.16	22.40
Professional, Technical & Kindred	100.00	6.91	14.27	8.15	3.38	33.44	3.43	2.51	3.60	24.31
Managers, Officials & Proprietors	100.00	7.08	15.70	12.38	3.06	29.61	3.76	3.92	3.06	21.43
Clerical & Kindred Workers	100.00	7.70	15.21	12.40	3.30	28.35	2.51	4.03	3.20	23.26
Sales Workers	100.00	6.95	16.51	12.72	2.66	25.34	2.94	3.85	3.09	25.94
Craftsmen, Foremen & Kindred	100.00	10.81	18.55	15.15	3.86	28.28	3.37	5.64	3.54	10.81
Operatives & Kindred Workers	100.00	9.64	17.34	12.17	5.43	21.70	4.85	6.59	3.87	18.40
Service Workers	100.00	6.32	12.38	10.62	3.33	36.56	5.06	2.63	2.58	20.51
Laborers Except Farmers & Miners	100.00	*	*	*	*	*	*	*	*	*
Farmers & Farm Workers	100.00	10.32	12.79	4.25	11.15	18.41	11.56	12.43	10.26	8.84

* Omitted as being without significance.

except in 4 instances out of 40. These groups, largely trained through vocational programs, are those of "clerical and kindred workers," "sales workers," "craftsmen, foremen and kindred workers," and "service workers." The relative changes for "service workers" in the East Tennessee district, for "sales workers" in the Mid-Cumberland district, and for both "craftsmen, foremen and kindred workers" and "service workers" in the Memphis Delta district, are the exceptions. They all occur in districts with metropolitan counties where the absolute changes are large and the expansions projected for "professional, technical and kindred workers" are approximately twice the relative changes for the all occupation totals.

The emphasis in Table 1 is upon relative changes over the projection period. There appears to be a close relationship in position or size rank between the 1969 total employment numbers shown in panel A and the percentage change measures shown in the last two panels. But the indication in panel D of almost one-third of the state total change in employment expansion projected to take place in the Mid-Cumberland district counties (and largely in the Nashville-Davidson SMSA), and of more than one-fifth to take place in the Memphis Delta district (and there largely in Shelby County) points to the large weight given in the projection procedures to the employment expansion trends during the more recent years and to the retarding effects of farm employment declines in the more rural districts.

The employment numbers shown in panels A and B of Table 2 indicate the concentration of employment in the metropolitan areas. The percentage changes between 1969 and 1975 shown in panel C indicate, except for the Memphis Delta district, that this concentration is projected to increase.

TABLE 2: TOTAL EMPLOYMENT BY METROPOLITAN AND NON-METROPOLITAN AREAS IN DEVELOPMENT DISTRICTS AND BY OCCUPATIONAL GROUP: TENNESSEE, 1969 AND 1975, WITH % CHANGE AND % DISTRIBUTION OF CHANGE

	Metropolitan and Non-Metropolitan Areas and Development Districts											
	East Tennessee DD			Southeast Tennessee DD			Mid-Cumberland DD			Memphis Delta DD		
	Total	Metro (Knoxville SMSA)	Non-Metro	Total	Metro (Chattanooga SMSA)	Non-Metro	Total	Metro (Nashville SMSA)	Non-Metro	Total	Metro Memphis SMSA	Non-Metro
A. Employment in 1969--Estimated												
Total	256,654	159,316	97,338	201,278	143,777	57,501	350,700	272,414	78,286	331,860	313,724	18,136
Professional, Technical & Kindred	29,376	20,200	9,176	21,503	16,420	5,083	44,845	37,858	6,987	40,833	39,630	1,203
Managers, Officials & Proprietors	18,785	12,747	6,038	14,770	11,186	3,584	27,010	22,212	4,798	28,980	28,140	840
Clerical & Kindred Workers	33,844	23,154	10,690	29,154	22,205	6,949	51,632	43,250	8,382	51,596	50,343	1,253
Sales Workers	17,068	11,792	5,276	13,513	10,395	3,118	25,630	21,122	4,508	27,630	26,548	1,082
Craftsmen, Foremen & Kindred	35,854	22,990	12,864	30,572	22,304	8,268	48,360	38,314	10,046	45,870	44,555	1,315
Operatives & Kindred Workers	64,375	36,564	27,811	55,254	36,532	18,722	73,284	55,838	17,446	65,017	62,335	2,682
Service Workers	31,270	21,172	10,098	21,972	16,430	5,542	43,807	35,100	8,707	45,640	43,425	2,215
Laborers, Except Farmers & Miners	12,562	8,267	4,295	10,100	7,565	2,535	16,612	14,280	2,332	16,894	16,208	686
Farmers & Farm Workers	13,520	2,430	11,090	4,440	740	3,700	19,520	4,440	15,080	9,400	2,540	6,860

TABLE 2 (continued):

	Metropolitan and Non-Metropolitan Areas and Development Districts											
	East Tennessee DD			Southeast Tennessee DD			Mid-Cumberland DD			Memphis Delta DD		
	Total	Metro (Knoxville SMSA)	Non-Metro	Total	Metro (Chattanooga SMSA)	Non-Metro	Total	Metro (Nashville SMSA)	Non-Metro	Total	Metro Memphis SMSA	Non-Metro
B. Employment in 1975--Projected												
Total	278,856	176,501	102,355	218,827	157,086	61,741	394,955	310,592	84,363	362,690	341,941	20,749
Professional, Technical & Kindred	34,080	23,305	10,775	24,192	18,930	5,262	55,870	47,486	8,384	48,850	45,420	3,430
Managers, Officials & Proprietors	20,360	13,822	6,538	16,012	12,133	3,879	29,980	24,758	5,222	31,130	30,670	460
Clerical & Kindred Workers	38,400	26,202	12,198	32,865	24,957	7,908	60,124	50,307	9,817	58,564	56,842	1,722
Sales Workers	19,057	13,320	5,737	15,046	11,702	3,344	28,683	23,906	4,777	30,755	29,930	825
Craftsmen, Foremen & Kindred	40,792	26,670	14,122	34,604	24,736	9,868	55,890	43,570	12,320	48,748	46,377	2,371
Operatives & Kindred Workers	69,506	40,296	29,210	58,855	38,770	20,085	79,708	60,923	18,785	70,463	67,334	3,129
Service Workers	33,766	22,822	10,944	24,113	18,016	6,097	51,180	41,810	9,370	49,775	47,136	2,639
Laborers, Except Farmers & Miners	12,175	8,164	4,011	9,630	7,267	2,363	18,030	14,382	3,648	16,940	16,262	678
Farmers & Farm Workers	10,720	1,900	8,820	3,510	575	2,935	15,490	3,450	12,040	7,465	1,970	5,495

TABLE 2 (continued):

	Metropolitan and Non-Metropolitan Areas and Development Districts											
	East Tennessee DD			Southeast Tennessee DD			Mid-Cumberland DD			Memphis Delta DD		
	Total	Metro (Knoxville SMSA)	Non-Metro	Total	Metro (Chattanooga SMSA)	Non-Metro	Total	Metro (Nashville SMSA)	Non-Metro	Total	Metro Memphis SMSA	Non-Metro
C. 1969-1975 Changes as Percent of 1969 Employment												
Total	8.65	10.79	5.15	8.72	9.26	7.37	12.62	14.01	77.62	9.29	8.99	14.41
Professional, Technical & Kindred	16.01	15.37	17.43	12.51	15.29	3.52	24.58	25.43	19.99	19.63	14.61	185.12
Managers, Officials & Proprietors	8.38	8.43	8.28	8.41	8.47	8.23	11.00	10.11	8.84	7.42	8.99	-45.24
Clerical & Kindred Workers	13.46	13.16	14.11	12.73	12.39	13.80	16.45	16.32	17.12	13.50	12.91	37.43
Sales Workers	11.65	12.96	8.74	11.34	13.54	7.25	11.91	12.70	5.97	11.31	12.74	-23.75
Craftsmen, Foremen & Kindred	13.77	11.65	9.78	13.19	10.90	19.35	15.57	13.72	22.64	6.27	4.09	80.30
Operatives & Kindred Workers	7.97	10.21	5.03	6.52	6.13	7.28	8.77	9.11	7.67	8.38	8.02	16.67
Service Workers	7.98	7.79	8.38	9.74	9.65	10.01	16.83	19.12	7.61	9.06	8.55	19.14
Laborers, Except Farmers & Miners	-3.08	-1.25	-6.61	-4.65	-3.94	-6.79	8.54	0.71	56.43	0.27	0.33	-1.17
Farmers & Farm Workers	-20.71	-21.81	-20.47	-20.95	-22.30	-20.68	-20.65	-22.30	-20.16	-20.59	-22.44	-19.90

TABLE 2 (continued):

	Metropolitan and Non-Metropolitan Areas and Development Districts											
	East Tennessee DD			Southeast Tennessee DD			Mid-Cumberland DD			Memphis Delta DD		
	Total	Metro (Knox-ville SMSA)	Non-Metro	Total	Metro (Chatta-nooga SMSA)	Non-Metro	Total	Metro (Nash-ville SMSA)	Non-Metro	Total	Metro Memphis SMSA	Non-Metro
D. 1969-1975 Changes as Percent of State Total Change												
Total	16.13	12.49	3.65	12.75	9.67	3.08	32.16	27.74	4.42	22.40	20.50	1.90
Professional, Technical & Kindred	14.27	9.42	4.85	8.15	7.61	0.54	33.44	29.20	4.24	24.31	17.56	6.75
Managers, Officials & Proprietors	15.70	10.72	4.98	12.38	9.44	2.94	29.61	25.38	4.23	21.43	25.22	-3.79
Clerical & Kindred Workers	15.21	10.18	5.04	12.40	9.20	3.20	28.35	23.56	4.79	23.26	21.70	1.57
Sales Workers	16.51	12.68	3.83	12.72	10.85	1.88	25.34	23.11	2.23	25.94	28.07	-2.13
Craftsmen, Foremen & Kindred	18.55	13.82	4.72	15.15	9.14	6.01	28.28	19.74	8.54	10.81	6.84	3.97
Operatives & Kindred Workers	17.34	12.61	4.73	12.17	7.56	4.61	21.70	17.18	4.52	18.40	16.89	1.51
Service Workers	12.38	8.18	4.20	10.62	7.87	2.75	36.57	33.28	3.29	20.51	18.41	2.10
Laborers, Except Farmers & Miners	*											
Farmers & Farm Workers	-12.79	-2.42	-10.37	-4.25	-0.75	-3.50	-18.41	-4.52	-13.89	-8.84	-2.60	-6.24

* Omitted as being without significance.

In the Memphis Delta district, employment for the two non-metropolitan counties is overshadowed by that of Shelby County. The larger percentages shown for the non-metropolitan counties are probably the result of the values being calculated as residuals. They illustrate the larger chance for error in the smaller allocated values. But attention should not be diverted from the indications of larger relative expansion for several occupation groups in the non-metropolitan counties. For instance, the "clerical and kindred worker" group is projected to expand by larger percentages in each of the non-metropolitan areas. This is also true for the "craftsmen, foremen and kindred worker" group in the Southeast and Mid-cumberland districts.

Projected Job Openings by Occupation and District--1969-1975

The data in Tables 1 and 2 relate to the 1969-1975 changes in employment arising only from industrial expansion and contraction. In Part I of the report it was explained that employment changes due to deaths and retirements of workers during the projection period must be added to these expansion changes to obtain measures of the total number of jobs that need to be filled. It was observed that for any appreciable projection period the replacement numbers are larger than those arising from industry expansion. Also, the patterns of replacement vary by occupation because of several factors. Among these are the effects of relatively hazardous working conditions in some occupations upon the working lives of employees, and the employment in other occupations of relatively large numbers of women who may enter and leave the labor force several times during their working lives. Thus, the job opening

patterns by occupation and development district differ from the patterns related to industry change alone.

The industry expansion and replacement needs are included with the number of job openings in Appendix B of Part I for the full list of occupations for which the Tennessee projections were made. The number of job openings projected for the nine major divisions of occupations as allocated to the nine Tennessee development districts is shown in panel A of Table 3, with the further allocation to metropolitan and non-metropolitan areas in the four districts with SMSAs shown in panel A of Table 4.

Although the industry expansion needs reflected in the previous tables indicated an absolute decline for the "laborers except farm and mine" group, it is shown here that some job openings are still to result from placement needs. Likewise, the projected large decline in the "farmers and farmworkers" group is reduced by replacement needs to about one-half in the number of job openings. In other words, about 22,000 fewer farmers and farm workers are expected in 1975 than in 1969. Some 11,000 of these may replace ones in the residual 84,000 workers who die or retire (from among the 106,000 in 1969), leaving 11,000 to either migrate from the State, find jobs in other occupations, or possibly become unemployed.

Reference to the more detailed data in the appendix tables will show that except for two occupation groups, "professional, technical and kindred" and "craftsmen, foremen and kindred" workers, the pattern for the development districts is one in which the replacement numbers are larger than those resulting from projected industrial expansion. The result is, as may be observed from the data shown in Tables 3 and 4, that job openings by occupation and district are much more closely related to

TABLE 3. TENNESSEE JOB OPENINGS FOR 1969-75 BY DEVELOPMENT DISTRICT AND OCCUPATIONAL GROUP--WITH PERCENTAGE DISTRIBUTIONS BY DISTRICT AND OCCUPATIONAL GROUP

Major Occupation Group	State Total	Regional State Planning and Development Districts								
		First Tennessee	East Tennessee	Southeast	Upper Cumberland	Mid-Cumberland	South Central	North-West	South-West	Memphis Delta
		A. Projected 1969-75 Total Job Openings								
Total	413,169	35,399	66,159	51,991	13,864	107,473	18,204	17,305	12,856	89,919
Professional, Technical & Kindred	60,340	4,241	9,077	5,794	2,118	18,195	2,655	1,720	2,254	14,286
Managers, Officials & Proprietors	25,601	2,025	4,049	3,187	759	6,613	1,185	1,049	802	5,932
Clerical & Kindred Workers	85,794	7,338	12,989	10,928	2,899	21,696	3,775	3,587	2,753	19,829
Sales Workers	37,848	2,960	6,098	4,777	967	9,237	1,434	1,445	1,174	9,756
Craftsmen, Foremen & Kindred	53,016	5,804	9,211	7,657	1,955	13,385	2,360	2,866	1,793	7,985
Operatives & Kindred Workers	85,099	8,507	14,506	11,539	4,110	17,175	5,405	5,686	3,221	14,950
Service Workers	70,490	5,010	10,799	8,070	2,320	19,958	3,895	2,185	1,878	16,375
Laborers, Except Farmers & Miners	6,251	680	870	524	-2	3,279	-1,209	170	146	1,794
Farmers & Farm Workers	-11,270	-1,166	-1,440	-485	-1,262	-2,065	-1,296	-1,403	-1,165	-988

TABLE 3 (continued):

Major Occupation Group	State Total	Regional State Planning and Development Districts								
		First Tennessee	East Tennessee	Southeast	Upper Cumberland	Mid-Cumberland	South Central	North-West	South-West	Memphis Delta
		B. Percentage Distribution by District								
Total	100.00	8.57	16.01	12.58	3.36	26.01	4.41	4.19	3.11	21.76
Professional, Technical & Kindred	100.00	7.03	15.04	9.60	3.51	30.15	4.40	2.85	3.74	23.68
Managers, Officials & Proprietors	100.00	7.91	15.82	12.45	2.96	25.83	4.63	4.10	3.13	23.17
Clerical & Kindred Workers	100.00	8.55	15.14	12.74	3.38	25.29	4.40	4.18	3.21	23.11
Sales Workers	100.00	7.82	16.11	12.62	2.55	24.40	3.79	3.82	3.10	25.78
Craftsmen, Foremen & Kindred	100.00	10.95	17.37	14.44	3.69	25.25	4.45	5.41	3.38	15.06
Operatives & Kindred Workers	100.00	9.96	17.05	13.56	4.83	20.18	6.35	6.68	3.79	17.57
Service Workers	100.00	7.11	15.32	11.45	3.29	28.31	5.53	3.10	2.66	23.23
Laborers, Except Farmers & Miners	100.00	10.88	13.92	8.38	-0.03	52.46	-19.34	2.72	2.34	28.70
Farmers & Farm Workers	100.00	10.35	12.78	4.30	11.20	18.32	11.50	12.45	10.34	8.77

TABLE 3 (continued):

Major Occupation Group	State Total	Regional State Planning and Development Districts: First Tennessee	East Tennessee	Southeast	Upper Cumberland	Mid-Cumberland	South Central	North-West	South-West	Memphis Delta
		C. Percentage Distribution by Occupational Group								
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Professional, Technical & Kindred	14.60	11.98	13.72	11.14	15.28	16.93	14.58	9.94	17.53	15.89
Managers, Officials & Proprietors	6.20	5.72	6.12	6.13	5.47	6.15	6.51	6.06	6.24	6.60
Clerical & Kindred Workers	20.76	20.73	19.63	21.02	20.91	20.19	20.74	20.73	21.41	22.05
Sales Workers	9.16	8.36	9.22	9.19	6.97	8.59	7.88	8.35	9.13	10.85
Craftsmen, Foremen & Kindred	12.83	16.40	13.92	14.73	14.10	12.45	12.96	16.56	13.95	8.88
Operatives & Kindred Workers	20.60	24.03	21.93	22.19	29.65	15.98	29.69	32.86	25.05	16.63
Service Workers	17.06	14.15	16.32	15.52	16.73	18.57	21.40	12.63	14.61	18.21
Laborers, Except Farmers & Miners	1.51	1.92	1.32	1.01	-0.01	3.05	-6.64	0.98	1.14	2.00
Farmers & Farm Workers	-2.73	-3.29	-2.18	-0.93	-9.10	-1.92	-7.12	-8.11	-9,06	-1.10

TABLE 4: TENNESSEE JOB OPENINGS FOR 1969-1975 IN METROPOLITAN AND NON-METROPOLITAN AREAS BY DISTRICTS AND OCCUPATION

	Metropolitan and Non-Metropolitan Areas and Development Districts											
	East Tennessee DD			Southeast Tennessee DD			Mid-Cumberland DD			Memphis Delta DD		
	Total	Metro (Knoxville SMSA)	Non-Metro	Total	Metro (Chattanooga SMSA)	Non-Metro	Total	Metro (Nashville SMSA)	Non-Metro	Total	Metro Memphis SMSA	Non-Metro
A. Projected 1969-75 Total Job Openings												
Total	66,159	44,469	21,730	51,991	38,289	13,702	107,473	88,637	18,836	89,919	82,363	7,556
Professional, Technical & Kindred	9,077	6,180	2,897	5,794	4,940	854	18,195	15,908	2,287	14,286	11,774	2,512
Managers, Officials & Proprietors	4,049	2,755	1,294	3,187	2,422	765	6,613	5,551	1,062	5,932	4,699	1,233
Clerical & Kindred Workers	12,989	8,802	4,187	10,928	8,232	2,696	21,696	18,160	3,536	19,829	18,971	858
Sales Workers	6,098	4,440	1,698	4,777	3,830	947	9,237	7,939	1,298	9,756	9,834	-78
Craftsmen, Foremen & Kindred	9,211	5,370	3,841	7,657	5,024	2,633	13,385	9,807	3,578	7,985	6,642	1,343
Operatives & Kindred Workers	14,506	9,245	5,261	11,539	7,467	4,072	17,175	13,085	4,090	14,950	13,622	1,328
Service Workers	10,799	7,227	3,572	8,070	6,014	2,056	19,958	17,154	2,804	16,375	15,409	966
Laborers, Except Farmers & Miners	870	739	131	524	452	72	3,279	1,586	1,693	1,794	1,732	62
Farmers & Farm Workers	-1,440	-289	-1,151	-485	-92	-393	-2,065	-553	-1,512	-988	-320	-668

TABLE 4 (continued):

	Metropolitan and Non-Metropolitan Areas and Development Districts											
	East Tennessee DD			Southeast Tennessee DD			Mid-Cumberland DD			Memphis Delta DD		
	Total	Metro (Knoxville SMSA)	Non-Metro	Total	Metro (Chattanooga SMSA)	Non-Metro	Total	Metro (Nashville SMSA)	Non-Metro	Total	Metro Memphis SMSA	Non-Metro
B. Percentage of State Total by District												
Total	16.01	10.75	5.26	12.58	9.27	3.32	26.01	21.45	4.56	21.76	19.93	1.83
Professional, Technical & Kindred	15.04	10.24	4.80	9.60	8.19	1.42	30.15	26.36	3.79	23.68	19.51	4.16
Managers, Officials & Proprietors	15.82	10.76	5.06	12.45	9.46	2.99	25.83	21.68	4.15	23.17	18.35	4.82
Clerical & Kindred Workers	15.14	10.26	4.88	12.74	9.60	3.14	25.29	21.17	4.12	23.11	22.11	1.00
Sales Workers	16.11	11.73	4.48	12.62	10.12	2.50	24.40	20.98	3.43	25.78	25.98	-0.20
Craftsmen, Foremen & Kindred	17.37	10.13	7.24	14.45	9.48	4.97	25.25	18.50	6.75	15.06	12.53	2.53
Operatives & Kindred Workers	17.05	10.86	6.19	13.56	8.77	4.79	20.18	15.38	4.80	17.57	16.01	1.56
Service Workers	15.32	10.25	5.07	11.45	8.53	2.92	28.31	24.33	3.97	23.23	21.86	1.37
Laborers, Except Farmers & Miners	13.92	11.82	2.10	8.38	7.23	1.15	52.46	25.37	27.09	28.70	27.71	0.99
Farmers & Farm Workers	-12.78	-2.56	-10.21	-4.30	-0.82	-3.49	-18.32	-4.91	-13.42	-8.77	-2.84	-5.93

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TABLE 4 (continued):

	Metropolitan and Non-Metropolitan Areas and Development Districts											
	East Tennessee DD			Southeast Tennessee DD			Mid-Cumberland DD			Memphis Delta DD		
	Total	Metro (Knoxville SMSA)	Non-Metro	Total	Metro (Chattanooga SMSA)	Non-Metro	Total	Metro (Nashville SMSA)	Non-Metro	Total	Metro Memphis SMSA	Non-Metro
C. Percentage Distribution by Occupational Group												
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Professional, Technical & Kindred	13.72	13.91	13.33	11.14	12.90	6.23	16.93	17.95	12.14	15.89	14.30	33.25
Managers, Officials & Proprietors	6.12	6.20	5.95	6.13	6.33	5.58	6.15	6.26	5.64	6.60	5.71	16.32
Clerical & Kindred Workers	19.63	19.81	19.27	21.02	21.50	19.68	20.19	20.49	18.77	22.05	23.03	11.36
Sales Workers	9.22	9.90	7.81	9.19	10.00	6.91	8.59	8.96	6.89	10.85	11.94	-1.03
Craftsmen, Foremen & Kindred	13.92	12.09	17.68	14.73	13.12	19.22	12.45	11.06	19.00	8.88	8.06	17.77
Operatives & Kindred Workers	21.93	20.80	24.21	22.19	19.50	29.72	15.98	14.76	21.71	16.63	16.54	17.58
Service Workers	16.32	16.27	16.44	15.52	15.71	15.01	18.57	19.35	14.89	18.23	18.71	12.78
Laborers, Except Farmers & Miners	1.32	1.66	0.60	1.01	1.18	0.52	3.05	1.79	8.99	2.00	2.10	0.82
Farmers & Farm Workers	-2.18	-0.65	-5.30	-0.93	-0.24	-2.87	-1.92	-0.62	-8.03	-1.10	-0.39	-8.84

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the size of employment than was found in the change or expansion numbers alone shown in Tables 1 and 2.

Average Annual Job Openings by District and Occupation

Tables 5 and 6 show the projected job openings in Tennessee for the 1969-1975 period allocated to the development districts in the 35 principal occupational categories and expressed as annual averages. It has been noted that the data were calculated as sums of projected industry expansion and replacement employment numbers for the State and then allocated to the development districts and SMSAs. Although the average openings are stated in numbers to the last digit, they must be interpreted as being only relative indicators of difference between districts and occupational groups. No specific cut-off can be assigned to distinguish between the significant and insignificant size numbers. This is not necessary because in most instances the smaller numbers of the potential openings would be absorbed or consolidated in the subject matter coverage of the vocational-technical education areas of fields of study and training.

The practical problem encountered in any attempt to use the projected job opening data in vocational-technical education planning arises from the difficulties of relating them to the subject matter and course structure of the school curricula. Other than the range of vocational course offerings from high schools through technical institutes and college short courses, there is also the task of cross referencing three involved occupation classification or coding systems. In addition, this translating of one coding system into another can best or most accurately be done with the occupational projections expressed at least in the detail

TABLE 5: TENNESSEE JOB OPENINGS BY DISTRICT AND PRINCIPAL OCCUPATION: ANNUAL AVERAGE OPENINGS FOR THE 1969-75 PERIOD

Major Occupation Group	State Total	Regional State Planning and Development Districts								
		First Tennessee	East Tennessee	Southeast	Upper Cumberland	Mid-Cumberland	South Central	North-West	South-West	Memphis Delta
Total	68,862	5,950	11,027	8,664	2,311	17,911	3,033	2,885	2,144	14,985
Professional, Technical & Kindred	10,058	707	1,513	966	353	3,034	443	292	377	2,381
Engineers, Technical	983	82	210	62	41	188	22	39	40	183
Medical & Other Health Workers	1,909	122	167	120	61	658	115	42	66	498
Teachers	1,990	122	297	177	61	868	124	36	64	554
Natural Scientists	222	16	16	10	8	50	-4	13	9	49
Social Scientists	36	2	3	2	1	8	1	2	2	10
Technical, Except Medical & Dental	645	53	43	33	25	136	17	22	30	136
Other Professional, Technical & Kindred	4,273	309	777	561	156	1,126	168	138	166	951
Managers, Officials & Proprietors	4,267	338	675	531	127	1,091	198	175	134	990
Conductors, Railroad	43	7	6	5	1	9	2	1	1	12
Officers, Pilots, Engineers Ship	22	4	3	3	1	5	1	1	1	6
Creditmen	86	5	13	11	3	11	4	4	3	21
Purchasing Agents	79	11	13	11	3	16	-5	4	2	15
Postmaster & Assistants	32	3	6	3	1	6	2	2	2	8
Managers, Officials, & Proprietors, N.E.C.	4,006	308	634	498	118	1,044	194	164	125	928

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TABLE 5 (continued):

Major Occupation Group	State Total	Regional State Planning and Development Districts								
		First Tennessee	East Tennessee	Southeast	Upper Cumberland	Mid-Cumberland	South Central	North-West	South-West	Memphis Delta
Clerical & Kindred Workers	14,299	1,223	2,165	1,821	483	3,616	629	598	459	3,304
Stenographers, Typists & Secretaries	3,967	327	590	506	135	1,092	246	161	123	918
Office Machine Operators	556	52	54	75	19	128	12	26	18	127
Other Clerical & Kindred	9,776	843	1,521	1,240	329	2,395	371	411	318	2,260
Sales Workers	6,308	493	1,016	796	161	1,540	239	241	196	1,626
Craftsmen, Foremen & Kindred	8,836	967	1,535	1,276	326	2,231	393	478	299	1,330
Construction Craftsmen	3,128	364	537	427	102	484	201	164	101	515
Foremen, N.E.C.	1,254	137	238	205	54	150	11	81	48	122
Metal Working Craftsmen, N.E.C.	887	93	139	136	39	1,034	51	57	28	95
Mechanics & Repairmen	2,369	232	423	338	82	407	113	110	80	423
Printing Trades Craftsmen	163	20	26	17	8	15	-24	12	7	17
Transportation & Public Utilities Craftsmen	281	40	40	34	9	34	14	9	9	55
Other Craftsmen & Kindred	754	84	133	120	31	109	28	45	26	103

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TABLE 5 (continued):

Major Occupation Group	State Total	Regional State Planning and Development Districts								
		First Tennessee	East Tennessee	Southeast	Upper Cumberland	Mid-Cumberland	South Central	North-West	South-West	Memphis Delta
Operatives & Kindred	14,183	1,418	2,418	1,923	685	2,862	901	957	537	2,492
Drivers & Deliverymen	1,772	166	215	180	61	510	61	51	57	436
Semi-skilled Metal Working Occup.	1,233	137	165	164	66	276	113	90	42	195
Transportation & Pub. Util. Operatives	147	19	18	15	5	83	6	6	6	38
Semi-skilled Textile Operatives	2,822	314	594	424	154	334	144	245	126	394
Other Operatives & Kindred	8,209	781	1,426	1,140	398	1,825	577	565	306	1,450
Service Workers	11,748	835	1,800	1,345	387	3,326	649	364	313	2,729
Private Household Workers	2,882	166	408	424	93	966	156	74	69	667
Protective Service Workers	516	31	87	85	24	90	18	22	20	103
Food Service Workers	2,700	174	441	262	80	603	121	87	75	645
Other Service Workers	5,650	465	863	574	190	1,668	324	182	149	1,314
Laborers, Except Farmers & Miners	1,042	113	145	87	0	546	-202	28	24	299
Farmers & Farm Laborers	-1,878	-194	-240	-81	-210	-344	-216	-234	-194	-165

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TABLE 6: TENNESSEE JOB OPENINGS IN METROPOLITAN AND NON-METROPOLITAN AREAS BY DISTRICT AND OCCUPATION--
ANNUAL AVERAGE OPENINGS FOR 1969-1975

	Metropolitan and Non-Metropolitan Areas and Development Districts											
	East Tennessee DD			Southeast Tennessee DD			Mid-Cumberland DD			Memphis Delta DD		
	Total	Metro (Knox-ville SMSA)	Non-Metro	Total	Metro (Chatta-nooga SMSA)	Non-Metro	Total	Metro (Nash-ville SMSA)	Non-Metro	Total	Metro Memphis SMSA	Non-Metro
Total	11,027	7,404	3,623	8,664	6,381	2,283	17,911	14,772	3,139	14,985	13,976	1,009
Professional, Technical & Kindred	1,513	1,030	483	966	823	143	3,032	2,651	381	2,381	1,962	419
Engineers, Tech.	210	97	113	62	88	-26	188	139	49	183	149	34
Medical & Other Health Workers	167	197	-30	120	152	-32	658	583	75	498	414	84
Teachers	297	192	105	177	144	33	868	782	86	554	402	152
Natural Scientists	16	24	-8	10	17	-7	50	41	9	49	38	11
Social Scientists	3	3	0	2	3	-1	8	7	1	10	9	1
Technical, Except Medical & Dental	43	63	-20	33	54	-21	136	105	31	136	108	28
Other Prof., Tech. & Kindred	777	454	323	561	365	196	1,126	993	133	951	843	108
Managers, Officials & Proprietors	675	459	216	531	404	127	1,102	925	177	989	1,043	-54
Conductors, Railroad	6	4	2	5	4	1	9	8	1	12	13	-1
Officers, pilots, engineers ship	3	2	1	3	2	1	5	4	1	6	6	0
Creditmen	13	9	4	11	9	2	21	16	5	21	22	-1
Purchasing Agents	13	9	4	11	8	3	16	14	2	15	15	0
Postmasters & Assistants	6	4	2	3	2	1	6	5	1	8	8	0
Managers, Officials, Proprietors, N.E.C.	634	431	203	498	378	120	1,044	878	166	928	980	-52

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TABLE 6 (continued):

	Metropolitan and Non-Metropolitan Areas and Development Districts											
	East Tennessee DD			Southeast Tennessee DD			Mid-Cumberland DD			Memphis Delta DD		
	Total	Metro (Knoxville SMSA)	Non-Metro	Total	Metro (Chattanooga SMSA)	Non-Metro	Total	Metro (Nashville SMSA)	Non-Metro	Total	Metro, Memphis SMSA	Non-Metro
Clerical & Kindred Workers	2,165	1,467	698	1,821	1,372	449	3,616	3,027	589	3,304	3,161	143
Stenographers, Typists & Secretaries	590	394	196	506	380	126	1,092	931	161	918	874	44
Office Machine Operators	54	56	-2	75	56	19	128	104	26	127	122	5
Other Clerical & Kindred	1,521	1,016	505	1,240	934	306	2,395	1,992	403	2,260	2,165	95
Sales Workers	1,016	733	283	796	638	158	1,540	1,323	217	1,626	1,639	-13
Craftsmen, Foremen & Kindred	1,535	895	640	1,276	837	439	2,231	1,635	596	1,330	1,107	223
Construction Craftsmen	537	340	197	427	228	199	484	591	-107	515	428	87
Foremen, N.E.C.	238	127	111	205	126	79	150	191	-41	122	132	-10
Metal Working Craftsmen, N.E.C.	139	75	64	136	96	40	1,034	121	913	95	84	11
Mechanics & Repairmen	423	248	175	338	221	117	407	515	-108	423	333	90
Printing Trades Craftsmen	26	9	17	17	17	0	15	23	-8	17	12	5
Transportation & Pub. Util. Craftsmen	40	26	14	34	27	7	34	52	-18	55	43	12
Other Craftsmen & Kindred	133	70	63	120	75	45	109	142	-33	103	76	27

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TABLE 6 (continued):

	Metropolitan and Non-Metropolitan Areas and Development Districts											
	East Tennessee DD			Southeast Tennessee DD			Mid-Cumberland DD			Memphis Delta DD		
	Total	Metro (Knoxville SMSA)	Non-Metro	Total	Metro (Chattanooga SMSA)	Non-Metro	Total	Metro (Nashville SMSA)	Non-Metro	Total	Metro Memphis SMSA	Non-Metro
Operatives & Kindred	2,418	1,540	878	1,923	1,245	678	2,862	2,180	682	2,492	2,260	232
Drivers & Deliverymen	215	160	55	180	144	36	510	346	164	436	417	19
Semi-skilled Metal-working Occup.	165	89	76	164	111	53	276	168	108	195	178	17
Transportation & Pub. Util. Operatives	18	12	6	15	13	2	-83	26	-57	38	36	2
Semi-skilled Textile Operatives	594	293	301	424	259	165	334	352	-18	374	334	40
Other Operatives & Kindred	1,426	985	441	1,140	718	422	1,825	1,288	537	1,450	1,294	156
Social Workers	1,800	1,205	595	1,345	1,002	343	3,326	2,859	467	2,729	2,568	161
Private Household Workers	408	390	18	424	240	184	966	863	103	667	633	34
Protective Service Workers	87	45	42	85	38	47	90	65	25	103	98	5
Food Service Workers	441	257	184	262	241	21	603	488	115	645	598	47
Other Service Workers	863	512	351	574	483	91	1,668	1,442	226	1,314	1,239	75
Laborers, Except Farmers & Miners	145	123	22	87	75	12	546	264	282	299	289	10
Farmers & Farm Workers	-240	-48	-192	-81	-15	-66	-344	-92	-252	-165	-53	-112

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used for the State projections in contrast to the 35 principal occupational groups used for the allocations to the development districts and SMSAs.

The projections in the detail used for the district allocations can be related to the vocational school planning uses after the code adjustments are made in the detail at the State total level. The projections have been made within the framework of the Bureau of Labor Statistics (BLS) adaptation for statistical use purposes of the Bureau of the Census (CB) descriptive classification or coding system for occupations. The relationships between the CB and BLS coded occupations are included in Volume IV of the BLS bulletin, Tomorrow's Manpower Needs.

Another Department of Labor, or BLS, classification of occupations is the one used for analyzing worker trait components and published in the Dictionary of Occupational Titles, Third Edition (DOT). The occupational group arrangement in the DOT classification system in the principal divisions, comparable to the nine as listed above in Tables 1 through 4, are as follows:

0) Professional, technical and managerial occupations
1)
2) Clerical and sales occupations
3) Service occupations
4) Farming, fishery, forestry, and related occupations
5) Processing occupations
6) Machine trades occupations
7) Benchwork occupations
8) Structural work occupations
9) Miscellaneous occupations

The jobs are given 6-digit code numbers with an additional 3-digit suffix code for use in statistical reporting of the more than 20,000 occupations defined in the volume.

The HEW Office of Education (OE) classification system for vocational-technical instructional course programs is contained in OE

Handbook VI, Standard Terminology for Curriculum and Instruction in Local and State School Systems. The system groups the instructional programs in seven principal divisions or areas of instruction. They are, as follows:

01 Agricultural
04 Distributive education
07 Health occupation education
09 Home economics
14 Office occupations
16 Technical education
17 Trade and industrial occupations

These 2-digit codes are followed by an 8-digit subject matter identification coding. In practice, as is indicated by the OE statistical reporting forms and the range of courses being offered in the schools, a substantially collapsed coding system could serve for the less than 150 groupings of subject matter.

The extended OE code does permit the specific matching of instructional course and occupation codes as is done in the parallel columns in the OE and Department of Labor Manpower Administration's jointly prepared Vocational Education and Occupations (OE Bulletin 80061, 1969). After the occupations for which projections have been made are matched with the DOT coded occupations, one can use this bulletin to approximate the demand for workers in terms of the vocational education instructional areas.

An "Explanation of Worker Trait Components" is included in the Dictionary of Occupational Titles as Appendix B in Volume II (pp. 652-6). The explanation is reproduced in full as an appendix to this report (see pages 40-45) for the purpose of again emphasizing the scope and complexity of the information needed for cross-classification between the BLS and Office of Education systems.

The applicable and especially strategic features in each of the six groups of worker trait components (see list on the first page of the appendix), such as abilities, personal traits, and individual characteristics related to successful job performance, are used in the DOT identification of occupations. The first worker trait component listed is that of "training time." It is the one of most importance in classifying occupations and for use in planning and administering vocational-technical education programs. The other components are more directly related to program structure or course content than to the features that demark vocational-technical education from academic or especially "higher education." The training time component includes or brings together the qualitative levels of "General Educational Development" (GED) and the quantitative levels of "Specific Vocational Preparation" (SVP).

We may make use here of a classification table of principal occupations by levels of GED and SVP which was developed by the Division of Research and Statistics of the New York Department of Labor and included in its occupational projection report, Manpower Directions, New York State, 1965-1975, pages 46-47 (Special Bulletin 241, March 1968). This table is shown on the following pages as Table 7.

In the New York study it was found that:

> If jobs are divided into lower-skill and higher-skill by classifying as higher-skill (1) those with a GED level of 4 or more and (2) those at GED level 3 with an SVP rating of 6 or more, then the higher-skill jobs account, in 1965, for half of the jobs (49.6 percent). In 1975, according to the projections, the higher-skill jobs will account for a slightly higher proportion of the total (51 percent). (p. 44)

The same analysis applied to "jobs to be filled," or job openings as used in this study, indicated that 53.4 would be higher-skill and 46.6 lower-skilled. It was found that only small differences would result from

TABLE 7: JOBS CLASSIFIED BY LEVEL OF GENERAL EDUCATIONAL DEVELOPMENT (GED) AND SPECIFIC VOCATIONAL PREPARATION (SVP)

GED	SVP	Occupation
6	8	Architects
		Clergymen
		Dentists
		Engineers, aeronautical
		Engineers, chemical
		Engineers, electrical
		Engineers, mechanical
		Engineers, metallurgical
		Other engineers, technical
		Lawyers and judges
		Natural scientists
		Osteopaths
		Physicians and surgeons
		Psychologists
		Teachers, college
6	7	Economists
		Other social scientists
5	8	Accountants and auditors
		Credit men
		Engineers, civil
		Engineers, mining
		Insurance adjusters
		Musicians
		Veterinarians
5	7	Artists, musicians, authors and actors
		Chiropractors and therapists
		Data processing and programming specialists
		Designers, except design draftsmen
		Draftsmen
		Engineers, industrial
		Librarians
		Optometrists
		Personnel and labor relations workers
		Pharmacists
		Social and welfare workers
		Statisticians and actuaries
		Structural design technicians and related specialists
		Teachers, secondary
		Teachers, n.e.c.
		Technical writing technicians
		Civil engineering and construction technicians
		Electronic engineering technicians
		Industrial engineering technicians
		Mathematics technicians
		Physical science technicians
		Professional, technical, and kindred workers, n.e.c.
		Other managers, officials, and proprietors, n.e.c. (except retail trade)
5	6	Airplane pilots and navigators
		Reporters
		Safety and sanitation inspectors and related specialists
		Teachers, elementary
		Mechanical engineering technicians
4	8	Carpenters
		Compositors and typesetters
		Engravers, except photoengravers
		Lithographers
		Patternmakers, metal and wood
		Stereotypers
		Watchmakers
4	7	Airway tower specialists and flight dispatchers
		Blacksmiths, forgemen, hammermen
		Boilermakers
		Broadcasting, motion picture and recording studio specialists

GED	SVP	Occupation
		Conductors, railroad
		Dancers
		Dietitians and nutritionists
		Electricians
		Electroplaters
		Foremen n.e.c.
		Heat treaters, and annealers
		Jewelers
		Linemen and servicemen (public utilities)
		Locomotive engineers and firemen
		Loom fixers
		Mechanics and repairmen
		Millwrights
		Molders, metal (except coremakers)
		Nurses, professional and student
		Ship officers, pilots, engineers
		Photographers
		Plumbers and pipefitters
		Postmasters and assistant postmasters
		Power plant operators
		Pressmen and plate printers
		Purchasing agents
		Radio operators
		Sales and service technicians
		Skilled machine workers
		Stationary engineers
		Electrical engineering technicians
		Technical illustrators
		Tinsmiths
		Toolmakers and diemakers
		Upholsterers
4	6	Attendants, physicians' and dentists' office
		Bookkeepers, hand
		Cabinetmakers
		Computer operators
		Cranemen
		Entertainers, n.e.c.
		Farmers
		Hairdressers and cosmetologists
		Housekeepers and stewards
		Insurance agents and brokers
		Millers
		Real estate agents and brokers
		Secretaries
		Electromechanical technicians
		Technicians, medical and dental
		Other managers, officials, and proprietors n.e.c. (retail)
		Other sales workers n.e.c.
4	5	Bank tellers
		Bookkeeping machine operators
		Payroll and timekeeping clerks
		Product testing and inspection specialists
4	4	Accounting clerks
		Postal clerks
3	8	Brickmasons and stone and tile setters
		Electrotypers
		Photoengravers
3	7	Bakers
		Blasters and powdermen
		Butchers
		Cooks, except private household
		Glaziers
		Painters and paperhangers
		Plasterers
		Rollers and roll hands
		Roofers and slaters
		Structural metalworkers
3	6	Asbestos and insulation workers
		Assemblers, metalworking, class A
		Athletes

GED	SVP	Occupation
		Cement and concrete finishers
		Firemen, fire protection
		Inspectors, metalworking, class B
		Opticians and lens grinders
		Welders and flame cutters
		Craftsmen and kindred workers, n.e.c.
3	5	Barbers
		Shipping and receiving clerks
		Stock clerks
		Dispatchers and starters
		Drivers, bus
		Excavating, grading machine operatives
		Furnacemen, smelters, and pourers
		Heaters, metal
		Inspectors, log and lumber
		Inspectors, other
		Receptionists
		Stenographers
		Tabulator operators
		Weavers, textile
		Operatives, n.e.c. (manufacture of food, paper, and transportation equipment)
3	4	Attendants, hospital and other institutions
		Billing machine operators
		Brakemen and switchmen (railroad)
		Duplicating machine operators
		Keypunchers
		Machine tool operators, metalwork, class B
		Mine operatives and laborers n.e.c.
		Patrolmen
		Practical nurses
		Sailors and deck hands
		Sewers and stitchers
		Operatives n.e.c. (manufacture of chemicals, plastics, rubber, wood products, and nonelectrical machinery)
3	3	Airline stewards and stewardesses
		Attendants, auto service
		Bartenders
		Calculating and other office machine operators
		File clerks
		Retail sales clerks
		Other clerical and kindred workers
		Deliverymen, routemen, cab drivers
		Drivers, truck and tractor
		Janitors and sextons
		Mail carriers
		Telephone operators
		Typists
		Waiters and waitresses
		Other service workers
		Operatives n.e.c. (nonmanufacturing)
3	2	Cashiers
		Ticket agents
		Watchmen, doorkeepers and bridge tenders
2	4	Spinners, textile
		Operatives n.e.c. (primary metal industries)
2	3	Counter and fountain workers
		Guards
		Kitchen workers
		Knitters, loopers and toppers
		Operatives n.e.c. (manufacture of textile, apparel, stone-clay-glass products, electrical machinery and supplies, and miscellaneous manufacturing)
2	2	Assemblers, metalworking class B
		Attendants, parking
		Chambermaids
		Charwomen and cleaners

GED	SVP	Occupation
		Electroplater helpers
		Elevator operators
		Farm laborers
		Laundry & dry cleaning operatives
		Messengers
		Porters
		Private household workers
2	1	Laborers, except farm

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shifting the levels up or down a few steps. Also, to quote the New York report again,

> No change at all is projected in importance of the largest single group of occupations shown in the table--those with GED level 3 and SVP level 3. This group--which includes sales clerks, typists, office clerks, and service workers of various kinds--comes out at around 23 percent of all jobs in both 1965 and 1975; similarly, it accounts for 22 percent of the total number of jobs to be filled . . . .
>
> The largest relative change is the downward shift in the proportion of the total represented by the lowest level of jobs (GED level 2) from 15.5 percent of the total in 1965 to 13.5 percent in 1975. The highest-level jobs (GED 5 and 6) shifted from 17.7 percent to 19.0 percent. (page 44)

In applying the same analysis to the Tennessee 1969 estimates and 1975 projections of employment and the projected number of job openings by occupation, it was found that around 28 percent of the jobs for both 1969 and 1975 would fall in the large GED level 3 and SVP level 3 group. For the job openings, during the six year period, the percentage would be about 30 percent. The deviations from the New York findings are explainable as following from the differences in industry mix and occupational structures. For instance, Tennessee has an above average share of total employment in the large "operatives and kindred workers" occupational group.

The principal problem incurred in applying the training time-worker trait levels to vocational-technical course structures is that the classified levels of traits apply to successful performance of job, and the instruction and training courses are designed to quality students for initial entry into jobs. The whole area of relating the projected employment numbers by occupation for the State by development district to the vocational school program course structure is one that should be explored more fully than could be undertaken in this study.

As observed in the introductory paragraphs of this report, the State's vocational-technical education system has now been established and expanded sufficiently for it to start providing the course completions and other data records by occupational field and development districts for use as measures of the extent to which the schools are meeting, or possibly in some instances exceeding, the projected job openings on an occupation-by-occupation basis. It is proposed that this study should be carried to its logical conclusion of translation of projected job openings for the State by development district to the coding or classification matching the vocational school instructional program classification. The ratios between the demand for workers, as represented by the projections, and the proportion of the supply of workers, as represented by the vocational school enrollments and completions, can then be developed so as to eventually provide a continuing guide for planning and administering the public vocational school system. The supply estimates would also have to consider worker training provided by proprietary schools, armed forces, and formal and informal OJT programs.

APPENDIX

The following is a reproduction taken from the U. S. Department of Labor, Dictionary of Occupational Titles, Third Edition, 1965, pages 652-656.

APPENDIX B

Explanation of Worker Trait Components

Those abilities, personal traits, and individual characteristics required of a worker in order to achieve average successful job performance are referred to as worker traits. Occupational information presented in volumes I and II is based in part on analysis of required worker traits in terms of the six distinct worker trait components described in this appendix. These six components have been selected for this purpose because they provide the broadest and yet most comprehensive framework for the effective presentation of worker trait information. Within this framework the user will find data concerning the requirements of jobs for: (1) The amount of general educational development and specific vocational preparation a worker must have, (2) the specific capacities and abilities required of him in order to learn or perform certain tasks or duties, (3) preferences for certain types of work activities or experiences considered necessary for job success, (4) types of occupational situations to which an individual must adjust, (5) physical activities required in work situations, and (6) physical surroundings prevalent in jobs.

Information reflecting significant worker trait requirements is contained, explicitly or by implication, in the job definitions in volume I. In the Worker Traits Arrangement in volume II, the qualifications profile for each worker trait group shows the range of required traits and/or levels of traits for the first five of these components. Numbers or letters are used to identify each specific trait and level. In this appendix, these identifying numbers and letters appear in italics.

The worker trait components are:

I. Training time (general educational development, specific vocational preparation)
II. Aptitudes
III. Interests
IV. Temperaments
V. Physical demands
VI. Working conditions [1]

I. Training Time

The amount of general educational development and specific vocational preparation required for a worker to acquire the knowledge and abilities necessary for average performance in a particular job.

General Educational Development: This embraces those aspects of education (formal and informal) which contribute to the worker's (a) reasoning development and ability to follow instructions, and (b) acquisition of "tool" knowledges, such as language and mathematical skills. It is education of a general nature which does not have a recognized, fairly specific, occupational objective. Ordinarily such education is obtained in elementary school, high school, or college. It also derives from experience and individual study.

[1] Working conditions were recorded as part of each job analysis, and are reflected, when appropriate, in job definitions in volume I. However, because they did not contribute to the homogeneity of worker trait groups, they do not appear as a component in the Worker Traits Arrangement.

The following is a table explaining the various levels of general educational development.

GENERAL EDUCATIONAL DEVELOPMENT

Level	Reasoning Development	Mathematical Development	Language Development
6	Apply principles of logical or scientific thinking to a wide range of intellectual and practical problems. Deal with nonverbal symbolism (formulas, scientific equations, graphs, musical notes, etc.) in its most difficult phases. Deal with a variety of abstract and concrete variables. Apprehend the most abstruse classes of concepts.	Apply knowledge of advanced mathematical and statistical techniques such as differential and integral calculus, factor analysis, and probability determination, or work with a wide variety of theoretical mathematical concepts and make original applications of mathematical procedures, as in empirical and differential equations.	Comprehension and expression of a level to —Report, write, or edit articles for such publications as newspapers, magazines, and technical or scientific journals. Prepare and draw up deeds, leases, wills, mortgages, and contracts. —Prepare and deliver lectures on politics, economics, education, or science. —Interview, counsel, or advise such people as students, clients, or patients, in such matters as welfare eligibility, vocational rehabilitation, mental hygeine, or marital relations. —Evaluate engineering technical data to design buildings and bridges.
5	Apply principles of logical or scientific thinking to define problems, collect data, establish facts, and draw valid conclusions. Interpret an extensive variety of technical instructions, in books, manuals, and mathematical or diagrammatic form. Deal with several abstract and concrete variables.		
4	Apply principles of rational systems [1] to solve practical problems and deal with a variety of concrete variables in situations where only limited standardization exists. Interpret a variety of instructions furnished in written, oral, diagrammatic, or schedule form.	Perform ordinary arithmetic, algebraic, and geometric procedures in standard, practical applications.	Comprehension and expression of a level to —Transcribe dictation, make appointments for executive and handle his personal mail, interview and screen people wishing to speak to him, and write routine correspondence on own initiative. —Interview job applicants to determine work best suited for their abilities and experience, and contact employers to interest them in services of agency. —Interpret technical manuals as well as drawings and specifications, such as layouts, blueprints, and schematics.
3	Apply common sense understanding to carry out instructions furnished in written, oral, or diagrammatic form. Deal with problems involving several concrete variables in or from standardized situations.	Make arithmetic calculations involving fractions, decimals and percentages.	Comprehension and expression of a level to —File, post, and mail such material as forms, checks, receipts, and bills. —Copy data from one record to another, fill in report forms, and type all work from rough draft or corrected copy. —Interview members of household to obtain such information as age, occupation, and number of children, to be used as data for surveys, or economic studies. —Guide people on tours through historical or public buildings, describing such features as size, value, and points of interest.
2	Apply common sense understanding to carry out detailed but uninvolved written or oral instructions. Deal with problems involving a few concrete variables in or from standardized situations.	Use arithmetic to add, subtract, multiply, and divide whole numbers.	
1	Apply common sense understanding to carry out simple one- or two-step instructions. Deal with standardized situations with occasional or no variables in or from these situations encountered on the job.	Perform simple addition and subtraction, reading and copying of figures, or counting and recording.	Comprehension and expression of a level to —Learn job duties from oral instructions or demonstration. —Write identifying information, such as name and address of customer, weight, number, or type of product, on tags, or slips. —Request orally, or in writing, such supplies as linen, soap, or work materials.

[1] Examples of "principles of rational systems" are: Bookkeeping, internal combustion engines, electric wiring systems, house building, nursing, farm management, ship sailing.

Specific Vocational Preparation: The amount of time required to learn the techniques, acquire information, and develop the facility needed for average performance in a specific job-worker situation. This training may be acquired in a school, work, military, institutional, or avocational environment. It does not include orientation training required of even every fully qualified worker to become accustomed to the special conditions of any new job. Specific vocational training includes training given in any of the following circumstances:

a. Vocational education (such as high school commercial or shop training, technical school, art school, and that part of college training which is organized around a specific vocational objective);
b. Apprentice training (for apprenticeable jobs only);
c. In-plant training (given by an employer in the form of organized classroom study);
d. On-the-job training (serving as learner or trainee on the job under the instruction of a qualified worker);
e. Essential experience in other jobs (serving in less responsible jobs which lead to the higher grade job or serving in other jobs which qualify).

The following is an explanation of the various levels of specific vocational preparation.

Level	Time	Level	Time
1	Short demonstration only.	5	Over 6 months up to and including 1 year.
2	Anything beyond short demonstration up and including 30 days.	6	Over 1 year up to and including 2 years.
3	Over 30 days up to and including 3 months.	7	Over 2 years up to and including 4 years.
4	Over 3 months up to and including 6 months.	8	Over 4 years up to and including 10 years.
		9	Over 10 years.

II. APTITUDES

Specific capacities and abilities required of an individual in order to learn or perform adequately a task or job duty.

G INTELLIGENCE: General learning ability. The ability to "catch on" or understand instructions and underlying principles. Ability to reason and make judgments. Closely related to doing well in school.

V VERBAL: Ability to understand meanings of words and ideas associated with them, and to use them effectively. To comprehend language, to understand relationships between words, and to understand meanings of whole sentences and paragraphs. To present information or ideas clearly.

N NUMERICAL: Ability to perform arithmetic operations quickly and accurately.

S SPATIAL: Ability to comprehend forms in space and understand relationships of plane and solid objects. May be used in such tasks as blueprint reading and in solving geometry problems. Frequently described as the ability to "visualize" objects of two or three dimensions, or to think visually of geometric forms.

P FORM PERCEPTION: Ability to perceive pertinent detail in objects or in pictorial or graphic material; To make visual comparisons and discriminations and see slight differences in shapes and shadings of figures and widths and lengths of lines.

Q CLERICAL PERCEPTION: Ability to perceive pertinent detail in verbal or tabular material. To observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation.

K MOTOR COORDINATION: Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and quickly.

F FINGER DEXTERITY: Ability to move the fingers and manipulate small objects with the fingers rapidly or accurately.

M MANAUL DEXTERITY: Ability to move the hands easily and skillfully. To work with the hands in placing and turning motions.

E EYE-HAND-FOOT COORDINATION: Ability to move the hand and foot coordinately with each other in accordance with visual stimuli.

C COLOR DISCRIMINATION: Ability to perceive or recognize similarities or differences in colors, or in shades or other values of the same color; to identify a particular color, or to recognize harmonious or contrasting color combinations, or to match colors accurately.

Explanation of Levels

The digits indicate how much of each aptitude the job requires for satisfactory (average) performance. The average requirements, rather than maximum or minimum, are cited. The amount required is expressed in terms of equivalent amounts possessed by segments of the general working population.

The following scale is used:

1 The top 10 percent of the population. This segment of the population possesses an extremely high degree of the aptitude.

2 The highest third exclusive of the top 10 percent of the population. This segment of the population possesses an above average or high degree of the aptitude.

3 The middle third of the population. This segment of the population possesses a medium degree of the aptitude, ranging from slightly below to slightly above average.

4 The lowest third exclusive of the bottom 10 percent of the population. This segment of the population possesses a below average or low degree of the aptitude.

5 The lowest 10 percent of the population. This segment of the population possesses a negligible degree of the aptitude.

Significant Aptitudes

Certain aptitudes appear in boldface type on the qualifications profiles for the worker trait groups. These aptitudes are considered to be occupationally significant for the specific group; i.e., essential for average successful job performance. All boldface aptitudes are not necessarily required of a worker for each individual job within a worker trait group, but some combination of them is essential in every case.

III. INTERESTS

Preferences for certain types of work activities or experiences, with accompanying rejection of contrary types of activities or experiences. Five pairs of interest factors are provided so that a positive preference for one factor of a pair also implies rejection of the other factor of that pair.

1	Situations involving a preference for activities dealing with things and objects.	vs.	*6*	Situations involving a preference for activities concerned with people and the communication of ideas.
2	Situations involving a preference for activities involving business contact with people.	vs.	*7*	Situations involving a preference for activities of a scientific and technical nature.
3	Situations involving a preference for activities of a routine, concrete, organized nature.	vs.	*8*	Situations involving a preference for activities of an abstract and creative nature.
4	Situations involving a preference for working for people for their presumed good, as in the social welfare sense, or for dealing with people and language in social situations.	vs.	*9*	Situations involving a preference for activities that are nonsocial in nature, and are carried on in relation to processes, machines, and techniques.
5	Situations involving a preference for activities resulting in prestige or the esteem of others.	vs.	*0*	Situations involving a preference for activities resulting in tangible, productive satisfaction.

IV. TEMPERAMENTS

Different types of occupational situations to which workers must adjust.

1 Situations involving a variety of duties often characterized by frequent change.

2 Situations involving repetitive or short cycle operations carried out according to set procedures or sequences.

3 Situations involving doing things only under specific instruction, allowing little or no room for independent action or judgment in working out job problems.

4 Situations involving the direction, control, and planning of an entire activity or the activities of others.

5 Situations involving the necessity of dealing with people in actual job duties beyond giving and receiving instructions.

6 Situations involving working alone and apart in physical isolation from others, although the activity may be integrated with that of others.

7 Situations involving influencing people in their opinions, attitudes, or judgments about ideas or things.

8 Situations involving performing adequately under stress when confronted with the critical or unexpected or when taking risks.

9 Situations involving the evaluation (arriving at generalizations, judgments, or decisions) of information against sensory or judgmental criteria.

0 Situations involving the evaluation (arriving at generalizations, judgments, or decisions) of information against measurable or verifiable criteria.

X Situations involving the interpretation of feelings, ideas, or facts in terms of personal viewpoint.

Y Situations involving the precise attainment of set limits, tolerances, or standards.

V. PHYSICAL DEMANDS

Physical demands are those physical activities required of a worker in a job.

The physical demands referred to in this Dictionary serve as a means of expressing both the physical requirements of the job and the physical capacities (specific physical traits) a worker must have to meet the requirements. For example, "seeing" is the name of a physical demand required by many jobs (perceiving by the sense of vision), and also the name of a specific capacity possessed by many people (having the power of sight). The worker must possess physical capacities at least in an amount equal to the physical demands made by the job.

The Factors

1 **Lifting, Carrying, Pushing, and/or Pulling (Strength).** These are the primary "strength" physical requirements, and generally speaking, a person who engages in one of these activities can engage in all.

Specifically, each of these activities can be described as:

(1) Lifting: Raising or lowering an object from one level to another (includes upward pulling).

(2) Carrying: Transporting an object, usually holding it in the hands or arms or on the shoulder.

(3) Pushing: Exerting force upon an object so that the object moves away from the force (includes slapping, striking, kicking, and treadle actions).

(4) Pulling: Exerting force upon an object so that the object moves toward the force (includes jerking).

The five degrees of Physical Demands Factor No. 1 (Lifting, Carrying, Pushing, and/or Pulling), are as follows:

S Sedentary Work

Lifting 10 lbs. maximum and occasionally lifting and/or carrying such articles as dockets, ledgers, and small tools. Although a sedentary job is defined as one which involves sitting, a certain amount of walking and standing is often necessary in carrying out job duties. Jobs are sedentary if walking and standing are required only occasionally and other sedentary criteria are met.

L Light Work

Lifting 20 lbs. maximum with frequent lifting and/or carrying of objects weighing up to 10 lbs. Even though the weight lifted may be only a negligible amount, a job is in this category when it requires walking or standing to a significant degree, or when it involves sitting most of the time with a degree of pushing and pulling of arm and/or leg controls.

M Medium Work

Lifting 50 lbs. maximum with frequent lifting and/or carrying of objects weighing up to 25 lbs.

H Heavy Work

Lifting 100 lbs. maximum with frequent lifting and/or carrying of objects weighing up to 50 lbs.

V Very Heavy Work

Lifting objects in excess of 100 lbs. with frequent lifting and/or carrying of objects weighing 50 lbs. or more.

2 **Climbing and/or Balancing:**

(1) Climbing: Ascending or descending ladders, stairs, scaffolding, ramps, poles, ropes, and the like, using the feet and legs and/or hands and arms.
(2) Balancing: Maintaining body equilibrium to prevent falling when walking, standing, crouching, or running on narrow, slippery, or erratically moving surfaces; or maintaining body equilibrium when performing gymnastic feats.

3 **Stooping, Kneeling, Crouching, and/or Crawling:**

(1) Stooping: Bending the body downward and forward by bending the spine at the waist.
(2) Kneeling: Bending the legs at the knees to come to rest on the knee or knees.
(3) Crouching: Bending the body downward and forward by bending the legs and spine.
(4) Crawling: Moving about on the hands and knees or hands and feet.

4 **Reaching, Handling, Fingering, and/or Feeling:**

(1) Reaching: Extending the hands and arms in any direction.
(2) Handling: Seizing, holding, grasping, turning, or otherwise working with the hand or hands (fingering not involved).
(3) Fingering: Picking, pinching, or otherwise working with the fingers primarily (rather than with the whole hand or arm as in handling).
(4) Feeling: Perceiving such attributes of objects and materials as size, shape, temperature, or texture, by means of receptors in the skin, particularly those of the finger tips.

5 **Talking and/or Hearing:**

(1) Talking: Expressing or exchanging ideas by means of the spoken word.
(2) Hearing: Perceiving the nature of sounds by the ear.

6 **Seeing**:

Obtaining impressions through the eyes of the shape, size, distance, motion, color, or other characteristics of objects. The major visual functions are: (1) acuity, far and near, (2) depth perception, (3) field of vision, (4) accommodation, (5) color vision. The functions are defined as follows:

(1) Acuity, far – clarity of vision at 20 feet or more.
Acuity, near – clarity of vision at 20 inches or less.
(2) Depth perception – three dimensional vision. The ability to judge distance and space relationships so as to see objects where and as they actually are.
(3) Field of vision – the area that can be seen up and down or to the right or left while the eyes are fixed on a given point.

(4) Accommodation—adjustment of the lens of the eye to bring an object into sharp focus. This item is especially important when doing near-point work at varying distances from the eye.
(5) Color vision—the ability to identify and distinguish colors.

VI. WORKING CONDITIONS

Working conditions are the physical surroundings of a worker in a specific job.

1 Inside, Outside, or Both:

I Inside: Protection from weather conditions but not necessarily from temperature changes.
O Outside: No effective protection from weather.
B Both: Inside and outside.
A job is considered "inside" if the worker spends approximately 75 per cent or more of his time inside, and "outside" if he spends approximately 75 per cent or more of his time outside. A job is considered "both" if the activities occur inside or outside in approximately equal amounts.

2 Extremes of Cold Plus Temperature Changes:

(1) Extremes of Cold: Temperature sufficiently low to cause marked bodily discomfort unless the worker is provided with exceptional protection.
(2) Temperature Changes: Variations in temperature which are sufficiently marked and abrupt to cause noticeable bodily reactions.

3 Extremes of Heat Plus Temperature Changes:

(1) Extremes of Heat: Temperature sufficiently high to cause marked bodily discomfort unless the worker is provided with exceptional protection.
(2) Temperature Changes: Same as 2 (2).

4 Wet and Humid:

(1) Wet: Contact with water or other liquids.
(2) Humid: Atmospheric condition with moisture content sufficiently high to cause marked bodily discomfort.

5 Noise and Vibration:

Sufficient noise, either constant or intermittent, to cause marked distraction or possible injury to the sense of hearing and/or sufficient vibration (production of an oscillating movement or strain on the body or its extremities from repeated motion or shock) to cause bodily harm if endured day after day.

6 Hazards:

Situations in which the individual is exposed to the definite risk of bodily injury.

7 Fumes, Odors, Toxic Conditions, Dust, and Poor Ventilation:

(1) Fumes: Smoky or vaporous exhalations, usually odorous, thrown off as the result of combustion or chemical reaction.
(2) Odors: Noxious smells, either toxic or nontoxic.
(3) Toxic Conditions: Exposure to toxic dust, fumes, gases, vapors, mists, or liquids which cause general or localized disabling conditions as a result of inhalation or action on the skin.
(4) Dust: Air filled with small particles of any kind, such as textile dust, flour, wood, leather, feathers, etc., and inorganic dust, including silica and asbestos, which make the workplace unpleasant or are the source of occupational diseases.
(5) Poor Ventilation: Insufficient movement of air causing a feeling of suffocation; or exposure to drafts.

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HARRIS, HENRY M.
A DETERMINATION OF CONTENT FOR A COURSE IN MACHINE DESIGN FOR POSSIBLE USE AT MEMPHIS STATE UNIVERSITY.

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PUB DATE - AUG70 36P. M.S. THESIS, MEMPHIS STATE UNIVERSITY, TENN.

DESCRIPTORS - CURRICULUM DEVELOPMENT; *COURSE CONTENT; RELEVANCE (EDUCATION); *CURRICULUM RESEARCH; *MACHINE DESIGN TECHNICIANS; *DRAFTING; VOCATIONAL EDUCATION; DESIGN; TECHNICAL EDUCATION; *INDUSTRIAL EDUCATION

ABSTRACT - TO MAKE SOUND RECOMMENDATIONS REGARDING THE POSSIBLE CONTENT OF MACHINE DESIGN COURSES OFFERED AS PART OF THE DRAFTING AND TECHNOLOGY PROGRAM AT MEMPHIS STATE UNIVERSITY, A SURVEY WAS MADE OF 15 AREA INDUSTRIES AND THE INDUSTRIES CLASSIFIED INTO TWO BASIC CATEGORIES: (1) INDUSTRIES INVOLVED IN THE MANUFACTURE OR MAINTENANCE OF LARGE INDUSTRIAL MACHINERY, AND (2) INDUSTRIES INVOLVED IN THE MANUFACTURE OR MAINTENANCE OF PRECISION MACHINES. AN ANALYSIS OF THE FINDINGS INDICATED WIDE VARIATIONS IN SUBJECTS' RESPONSE TO CURRICULUM INCLUSIONS. IT WAS CONCLUDED HOWEVER, THAT MACHINE COURSES WOULD BENEFIT FROM ADDING THE FOLLOWING TOPIC AREAS: (1) CONSIDERATIONS IN MACHINE DESIGN, (2) STRENGTH OF MATERIALS REVIEW, (3) FASTENINGS, (4) POWER TRANSMISSIONS, (5) FITS AND FINISHES, (6) DISPLACEMENT, (7) VELOCITY, (8) ACCELERATIONS AND (9) GRAPHICAL ANALYSIS OF MOTION. (SN)

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A DETERMINATION OF CONTENT FOR A COURSE IN MACHINE DESIGN FOR POSSIBLE USE AT MEMPHIS STATE UNIVERSITY

by

Henry M. Harris

A Research Report Submitted in
Partial Fulfillment of the Requirements
for the Degree of Master's of
Science in Technical Education

Approved:

Kenneth D. Crews
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MEMPHIS STATE UNIVERSITY
MEMPHIS, TENNESSEE

August, 1970

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INTRODUCTION

Too often our schools fail to meet the needs of our society. As the complexity of occupation changes, so must our schools change to fit their needs. Because occupational patterns are changing rapidly in response to Technology, education is never terminal.

Plans must be made well in advance in order to initiate the necessary changes in time to meet the educational need of our society. Many occupations have advanced to the point where they require a higher level of specialization and related knowledge that are best learned and taught within the educational framework. Therefore, the school curriculum should be under continuous study and revision by teachers and administration. To consider a course of study as a finish product is as dangerous as to attempt to teach without one. (Giachino and Gallington, 1961, p. 10) If we look upon youth as the promise of the future, we must meet their needs by offering to them that type of educational content as closely related to the world of work as possible.

Statement of the Problem

The purpose of this study was to make recommendations for possible content of machine design courses at Memphis State University as it relates to Drafting and Design Technology for students preparing to be employed in the capacity of machine designers.

Statement of Objectives

The specific objectives of this study were as follows:

1. To review the literature written by authors related to the curriculum in machine design.
2. To develop a course outline using the data gathered from the questionnaires.
3. To make recommendations for possible course content in machine design courses at Memphis State University.

Limitations

The specific limitations of this study were as follows:

1. This study was limited to machine design courses.
2. This study was limited to industries in the Memphis area.
3. This study was limited to individuals employed in the capacity of machine designers.

Definition of Terms

1. COURSE OF STUDY - A comprehensive plan which shows the scope and teaching sequence of all the activities provided for a particular subject in a curriculum. (Giachino and Gallington, 1961, p. 7)

REPORT OF THIS STUDY

A survey was made of a sample of fifteen (15) industries in the Memphis area to determine possible content in machine design courses at Memphis State University. The questionnaire used to gather data for this study was developed from textbooks (1, 3, 4, and 6 shown in the Bibliography) written on machine design. To assure that the samples were representative of the population, the industries that employed machine designers were divided into two basic classifications: (1) industries involved

in the manufacture or maintenance of large industrial machinery, and (2) industries involved in the manufacture of maintenance of precision machines. The samples of fifteen industries from the two basic groups were selected at random with eight (8) being selected from the first group, and seven (7) from the second group.

Figures were constructed for each industry to show their responses to each area on the questionnaire according to levels of importance. The importance of a particular area indicated by different industries differ tremendously because of the kind of manufacture processes being executed in that industry. Also the size of a particular industry could affect its response to the level of importance of a single area. For example, an industry that manufactures farm machinery would likely respond most important to such areas as gear trains, clutches and brakes, and cams. Whereas industries that manufacture machinery required to do precision operations would not place much emphasis on those areas.

It was also indicated to the interviewer by persons being interviewed that any machine parts that could be purchased from other industries specializing in its manufacture (such as cams, gears, springs, etc.) would be more economical to buy than to make.

Figures 1-15 illustrate the responses of each industry to all areas on the questionnaire. An average of responses of all samples is shown in Figure 16. Recommendations have been made

from Figure 16 on those areas that were indicated by industry as being a necessary part of a machine design course.

Persons being interviewed did not respond to the most important and least important areas on the questionnaire. Because of the nature of production, no one area was considered.

Bluff City Machine Works

Bluff City Machine Works is a machine shop that specializes in general machine works, fixtures, machinery rebuilding, and hydraulics.

The engineer that was interviewed indicated that the areas most important for their needs are materials and their properties, manufacturing process in design, stress analysis, dimensions, tolerances and fits, ball and roller bearings, velocity and accelerations. It was also indicated that screw fastenings, rivets, and springs are least important.

It was concluded that emphasis should also be placed on hydraulics, and motion study. Motion study refers to the set-up and positioning of materials to save time and money.

A distribution of responses for Bluff City Machine Works to all areas on the questionnaire is shown in Figure 1.

Bowman-Everett and Associates, Incorporated

Bowman-Everett and Associates, Incorporated specializes in engineering design. This firm employs a staff of engineers and draftsmen. The areas indicated most important were dimensions, tolerances, and fits, and ball and roller bearings. It was also

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

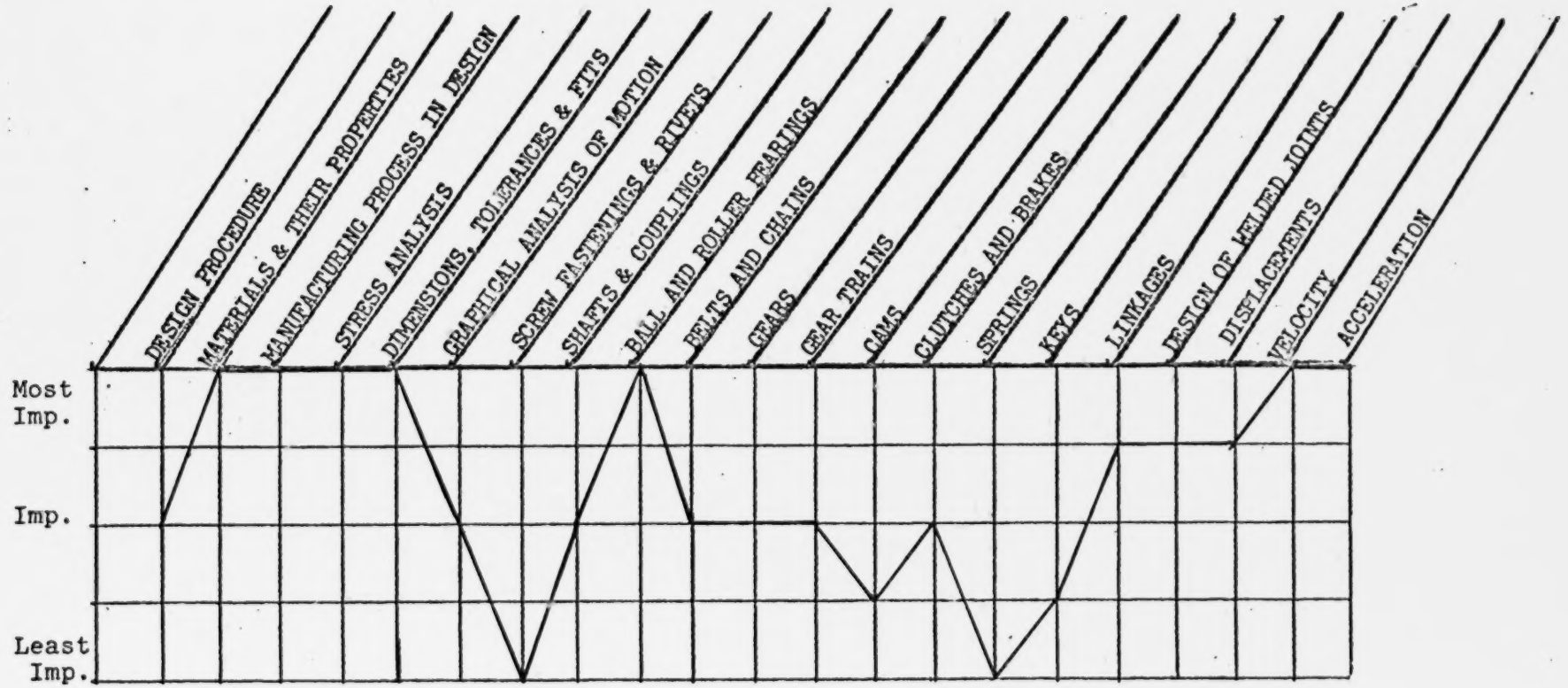

FIGURE 1

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY BLUFF CITY MACHINE WORKS

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

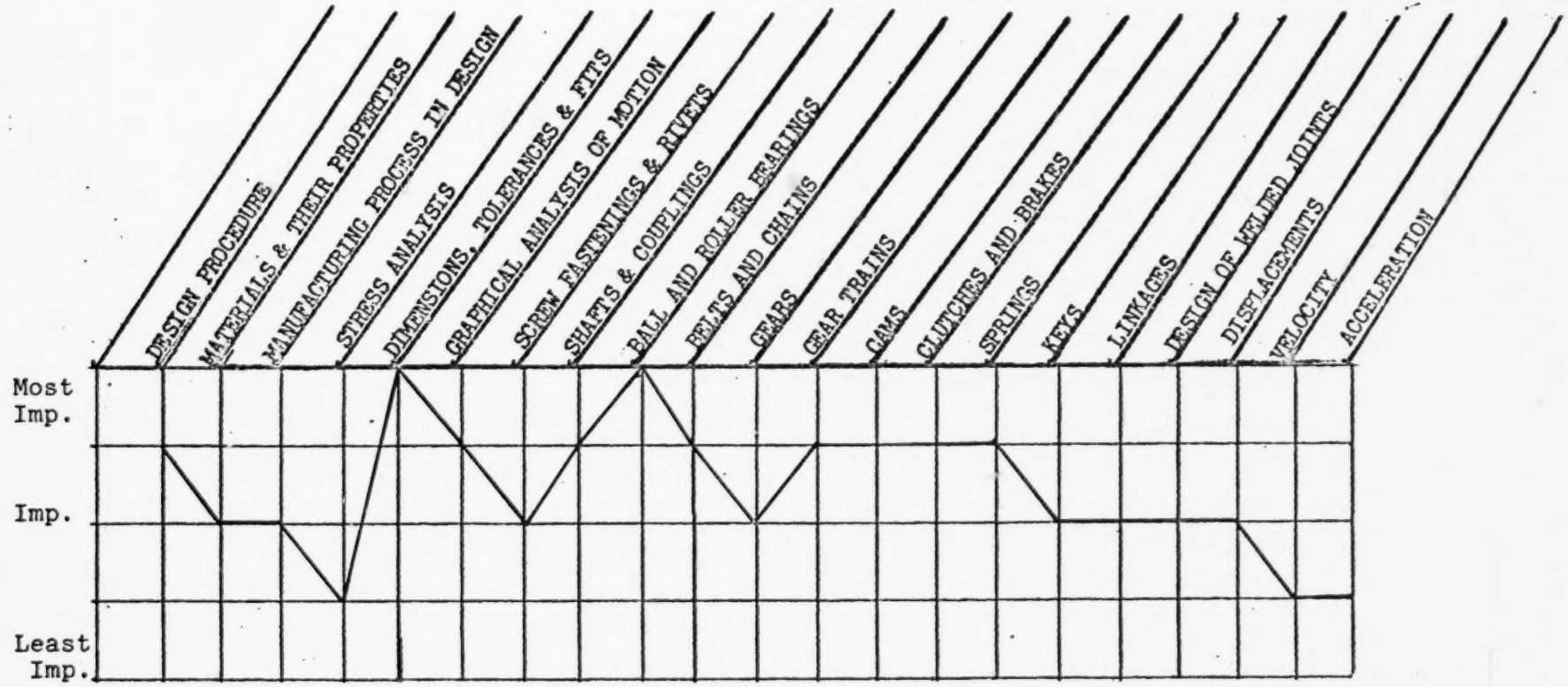

FIGURE 2

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY BOWMAN-EVERETT AND ASSOCIATES, INCORPORATED

indicated that more emphasis should be placed on fluid mechanics, shop theory and procedure, sketchings, creative ability, mathematics, and numerical control or use of computers.

It was concluded that without creative ability many engineers are merely as machines rather than a designer.

A distribution of responses to all areas for Bowman-Everett and Associates, Incorporated to all areas on the questionnaire is shown in Figure 2.

Buckeye Cellulose Corporation

Buckeye Cellulose Corporation is an industry that processes raw materials in bulk quantities. Some of the raw materials processed are rubber, cellulose, acetate, and polyethelene. This industry has a Mechanical Engineering Department designed for the maintenance of the machines used in processing these materials.

It was indicated that design procedure was the most important area, and that springs and displacements and the areas considered least important.

A distribution of responses for Buckeye Cellulose Corporation to all areas on the questionnaire is shown in Figure 3.

Chicago Bridge and Iron Comapny (Engineering Department)

Chicago Birdge and Iron Company's Engineering Department designs equipment for all of their production plants in the United States and abroad. This engineering firm employs a staff of engineers, technicians, and draftsmen.

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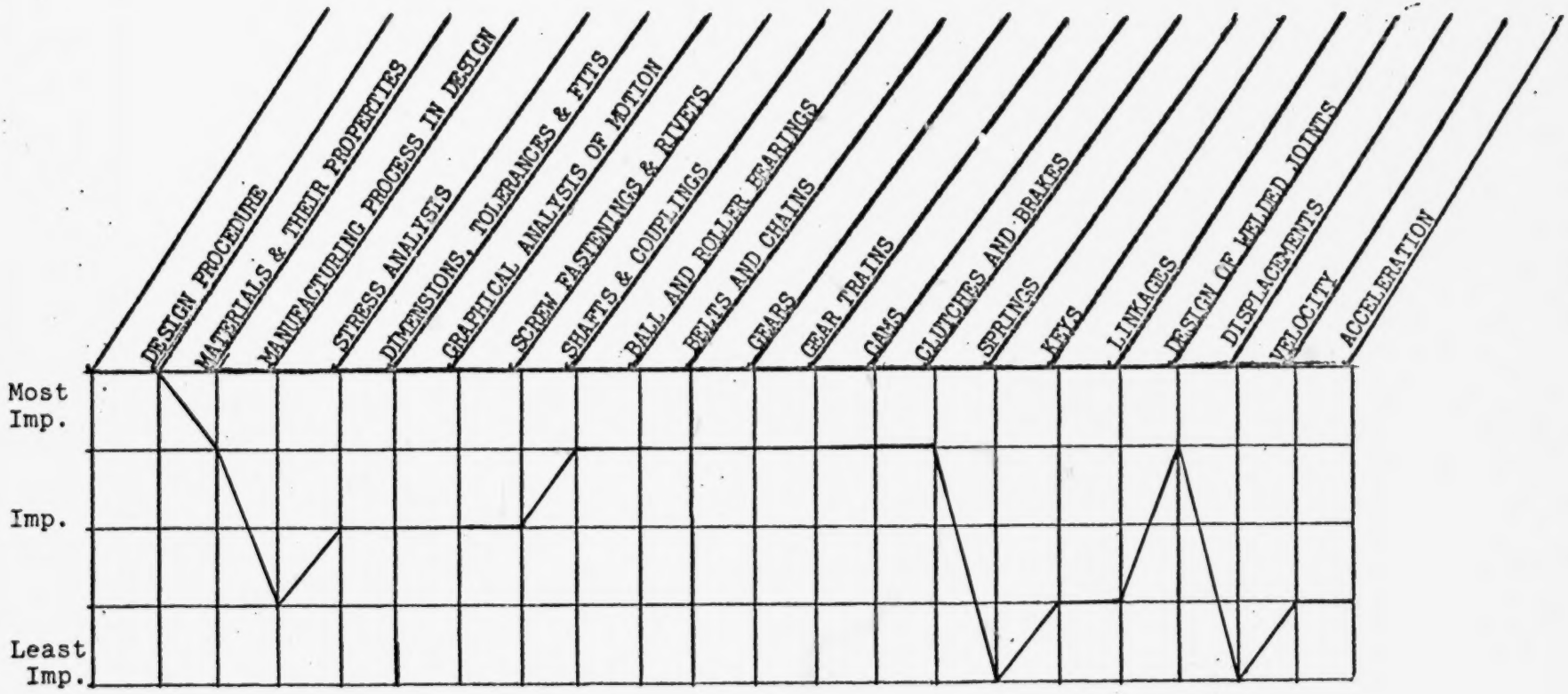

FIGURE 3

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY BUCKEYE CELLULOSE CORPORATION

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

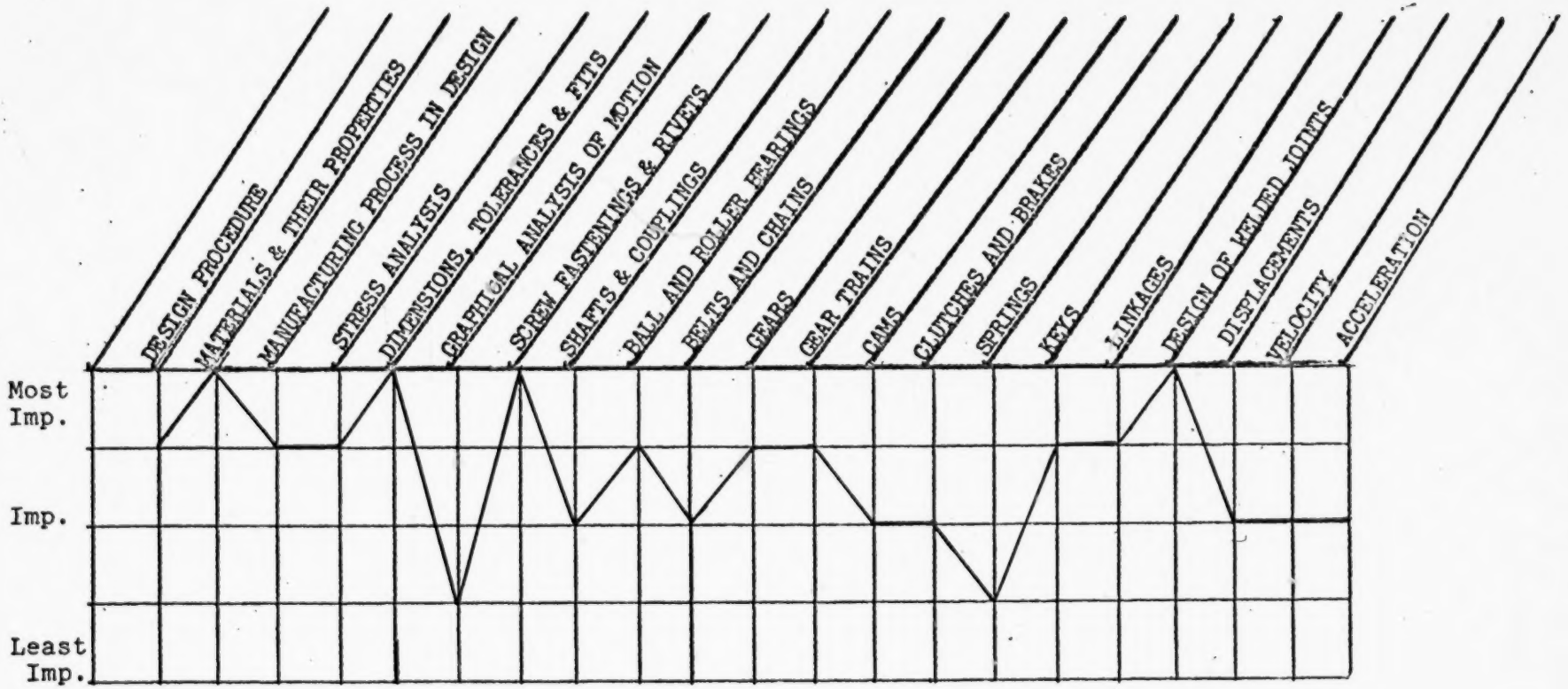

FIGURE 4

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY
CHICAGO BRIDGE AND IRON COMPANY
(ENGINEERING DEPARTMENT)

The areas indicated as being most important are materials and their properties, dimensions, tolerances, and fits, screw fastenings and rivets, and the design of welded joints. It was concluded that more emphasis should be placed on trigonometry and algebra since they are relative to drafting and design.

A distribution of responses for Chicago Bridge and Iron Company (Engineering Department) to all areas on the questionnaire is shown in Figure 4.

Chicago Bridge and Iron Company (Production Plant)

Chicago Bridge and Iron Company's Production Plant produces large equipment such as cranes, barges, and vats used in storing chemicals at low temperatures. The areas indicated as being most important are stress analysis, dimensions, and fits, design of welded joints.

Simple machine parts are not important to this industry because of the type of production being done in this plant.

A distribution of responses for Chicago Bridge and Iron Company (Production Plant) to all areas on the questionnaire is shown in Figure 5.

Cleo Wrap Corporation

Cleo Wrap Corporation is a large industry that produces such products as cards, wrapping paper, and bags. This industry has an Engineering Department set-up for the purpose of maintenance of their production machines. The area indicated most important was graphical analysis of motion.

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

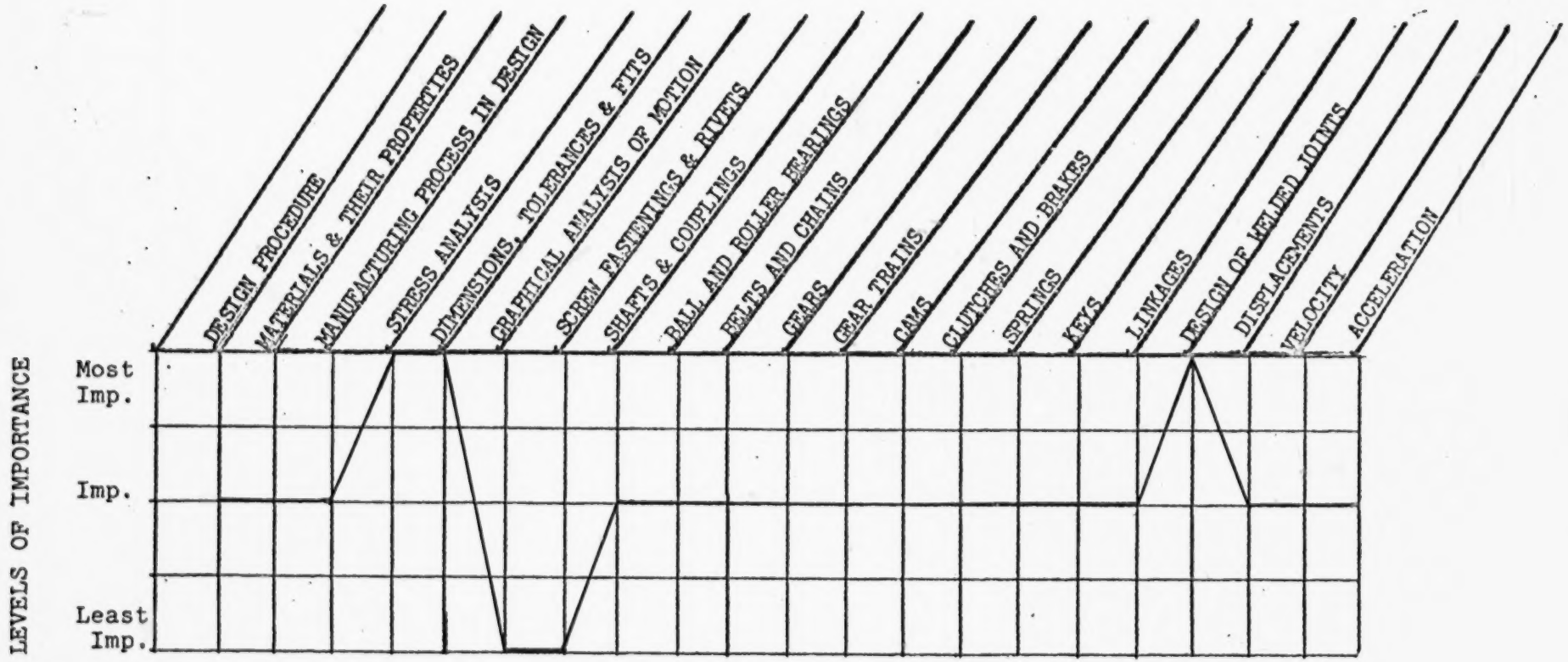

FIGURE 5

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY
CHICAGO BRIDGE AND IRON COMPANY
(PRODUCTION DEPARTMENT)

1066

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

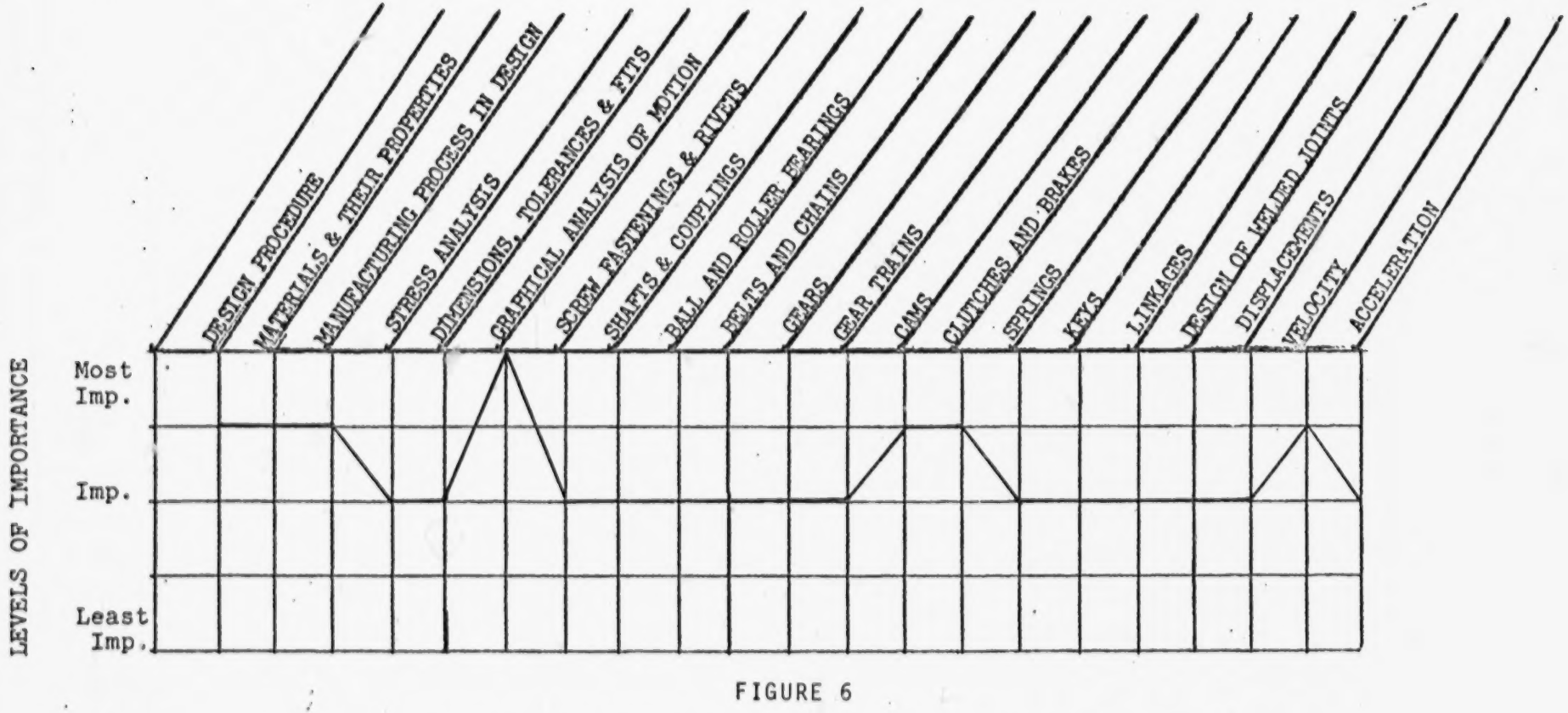

FIGURE 6

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY CLEO WRAP CORPORATION

1697

The needs of this industry are determined largely by the different types of machines being used. Emphasis is placed on the ability of a machine to execute precise operations.

A distribution of responses for Cleo Wrap Corporation to all areas on the questionnaire is shown in Figure 6.

Dover Elevator Corporation

Dover Elevator Corporation produces and maintains oildraulics and electric elevators for passenger and freight service. This industry employs a staff of mechanical engineers, technicians, and draftsmen. The area considered most important was dimensions, tolerances, and fits.

The needs of this industry only involve the design of elevators.

A distribution of responses for Dover Elevator Corporation to all areas on the questionnaire is shown in Figure 7.

Firestone

Firestone is an industry that produces and rebuilds tires. The entire production of these tires is highly automated. The Engineering Department is set-up for the purpose of maintenance of these machines. The areas indicated most important are stress analysis, graphical analysis of motion, gears, cams, springs, linkages, displacements, velocity, and accelerations.

It was indicated by the person being interviewed that more emphasis should be placed on hydraulics, pneumatic, and electrical controls.

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

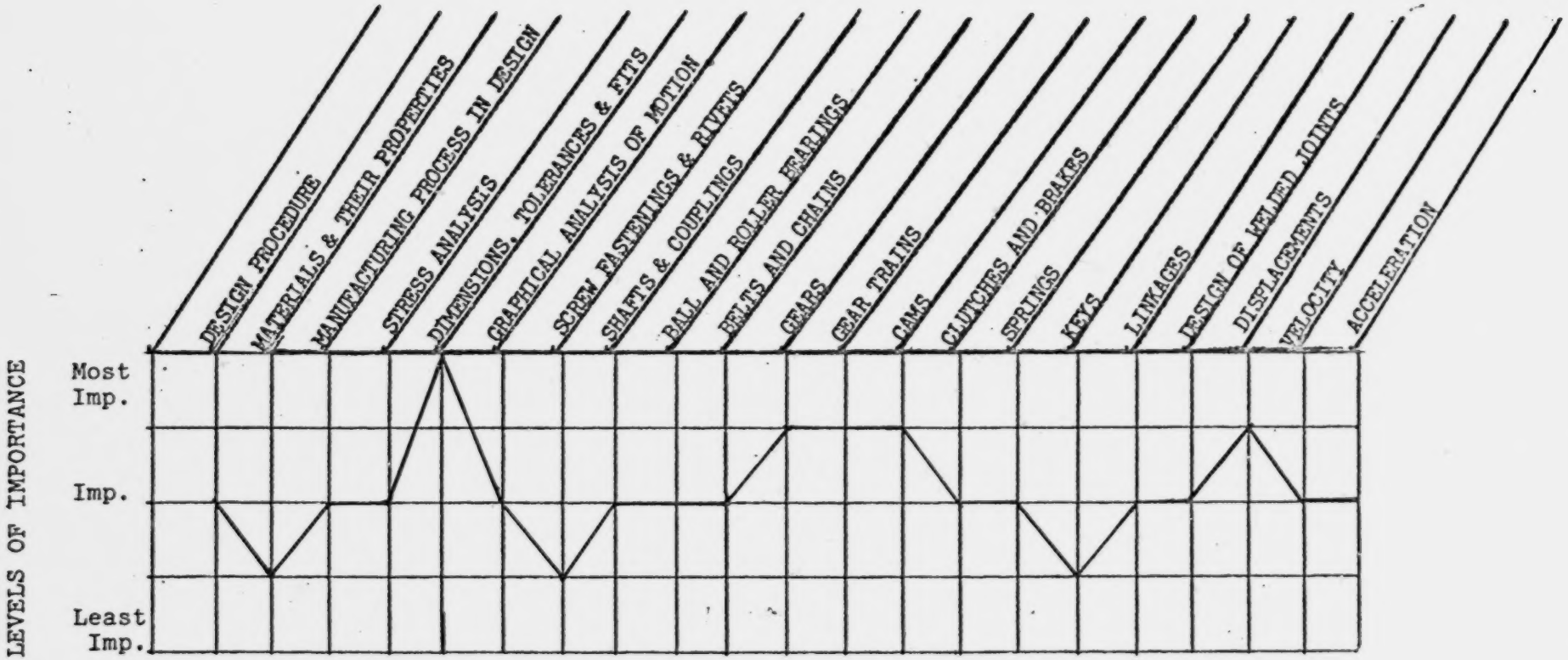

FIGURE 7

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY DOVER ELEVATOR CORPORATION

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

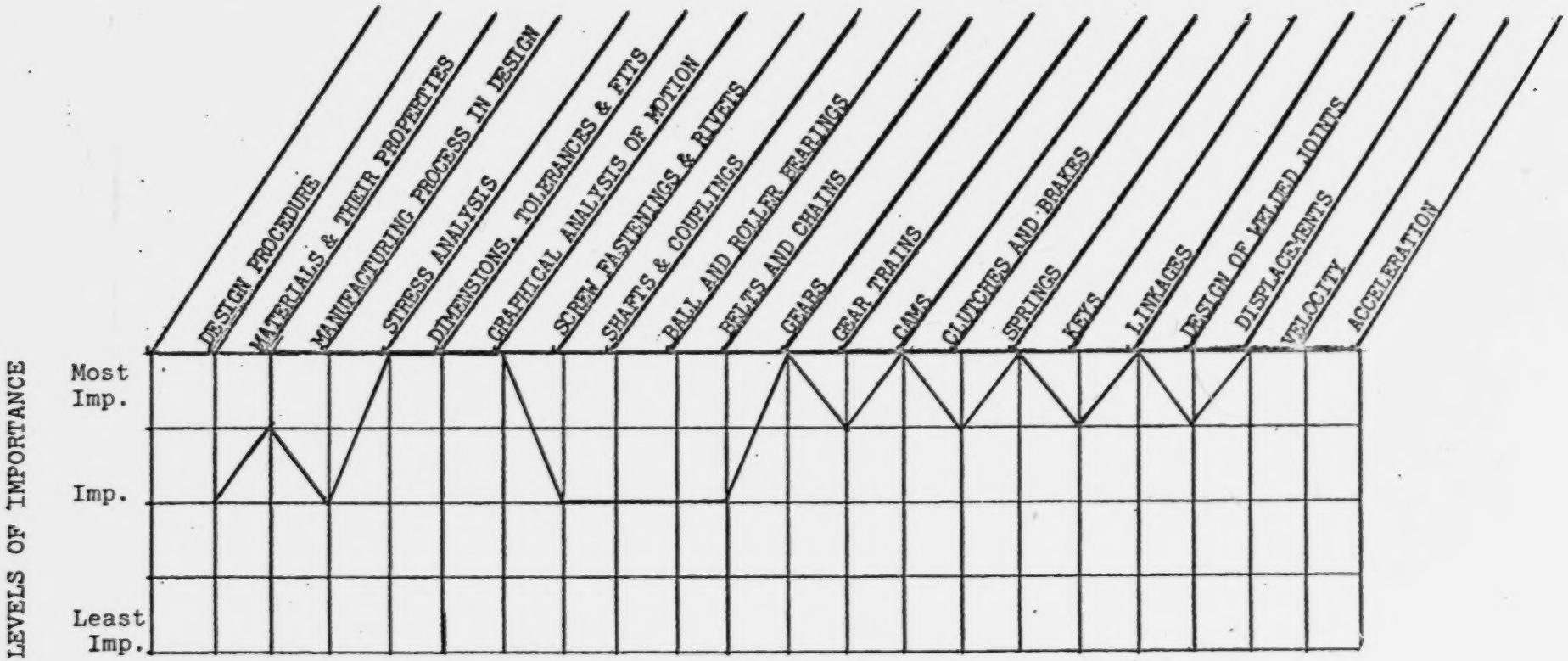

FIGURE 8

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY FIRESTONE

A distribution of responses for Firestone to all areas on the questionnaire is shown in Figure 8.

Industrial Machine and Tool Company, Incorporated

Industrial Machine and Tool Company, Incorporated specializes in machine building. They also produce tool dies, gages, fixtures, and drilling special machine works. This industry employs engineers and machinists.

The area indicated as being most important was dimensions, tolerances, and fits.

A distribution of responses for Industrial Machine and Tool Company, Incorporated to all areas on the questionnaire is shown in Figure 9.

International Harvester (Product Engineering Department)

International Harvester specializes in the production of farm machinery such as cotton pickers, and hay bailers. They also produce small garden tractors, and power lawn mowers.

The Product Engineer did not rate any of the areas as most important, but indicated that emphasis should be placed on casting design, lubrication, and safety.

A distribution of responses for International Harvester (Product Engineering Department) to all areas on the questionnaire is shown in Figure 10.

International Harvester (Tooling Engineering Department)

The Tooling Engineer indicated that the most important areas were design procedure, materials and their properties,

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

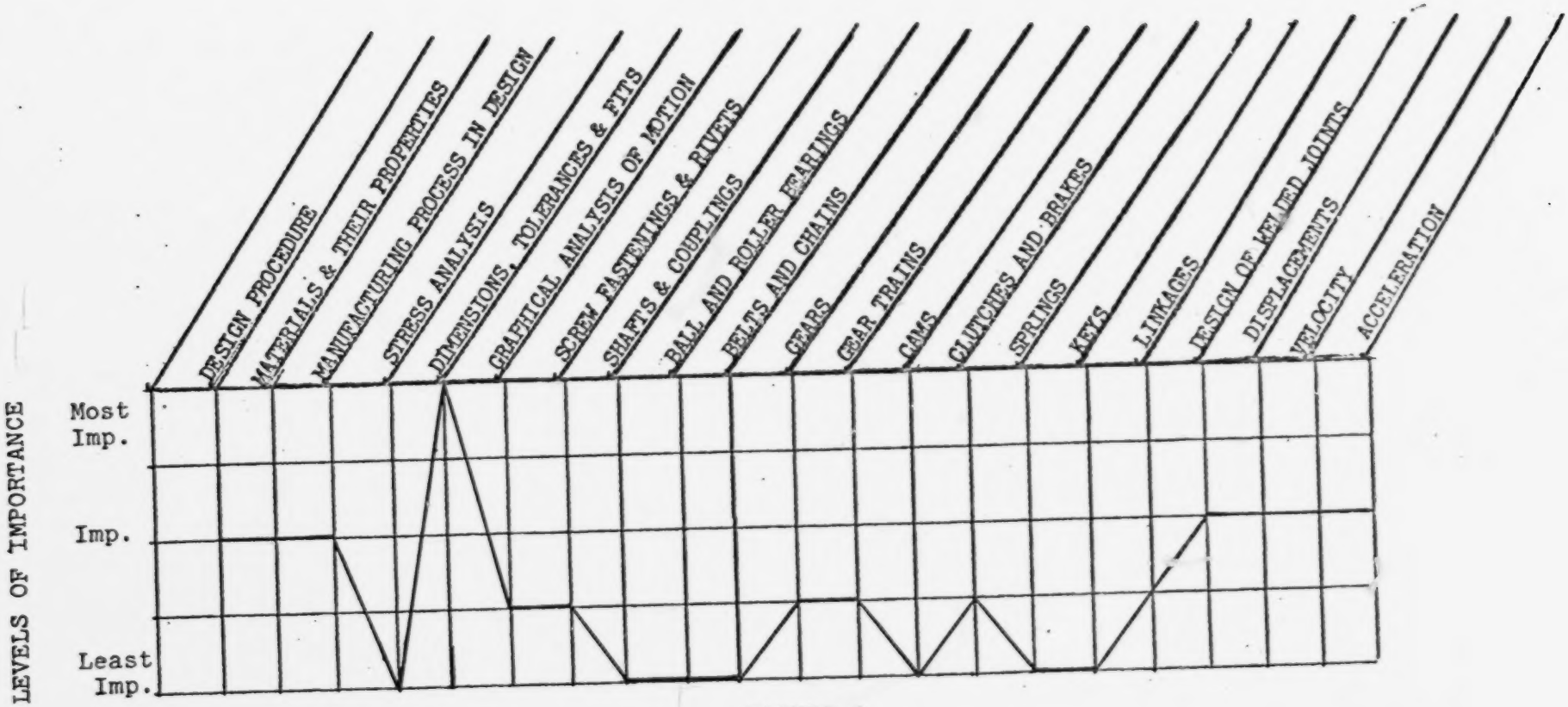

FIGURE 9

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY INDUSTRIAL MACHINE AND TOOL COMPANY

1072

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

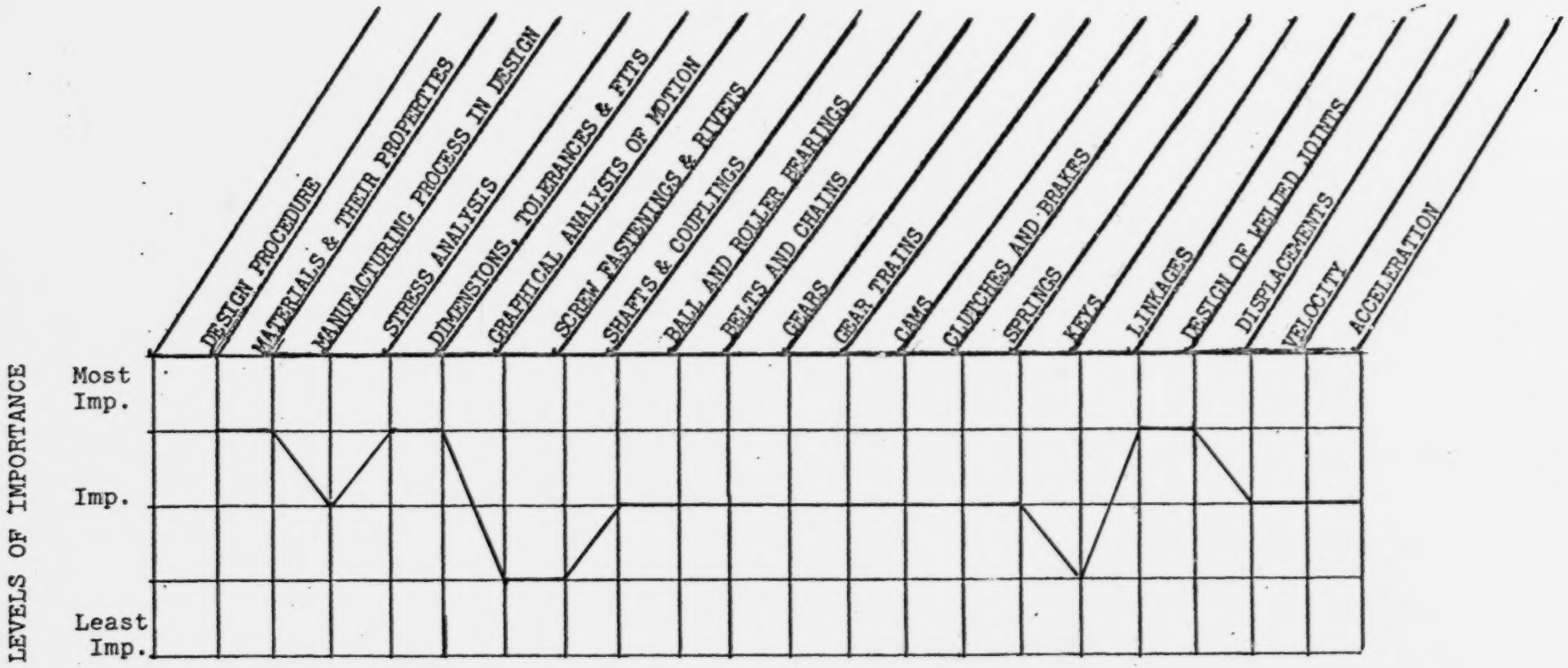

FIGURE 10

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY
INTERNATIONAL HARVESTER
(PRODUCT ENGINEERING DEPARTMENT)

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

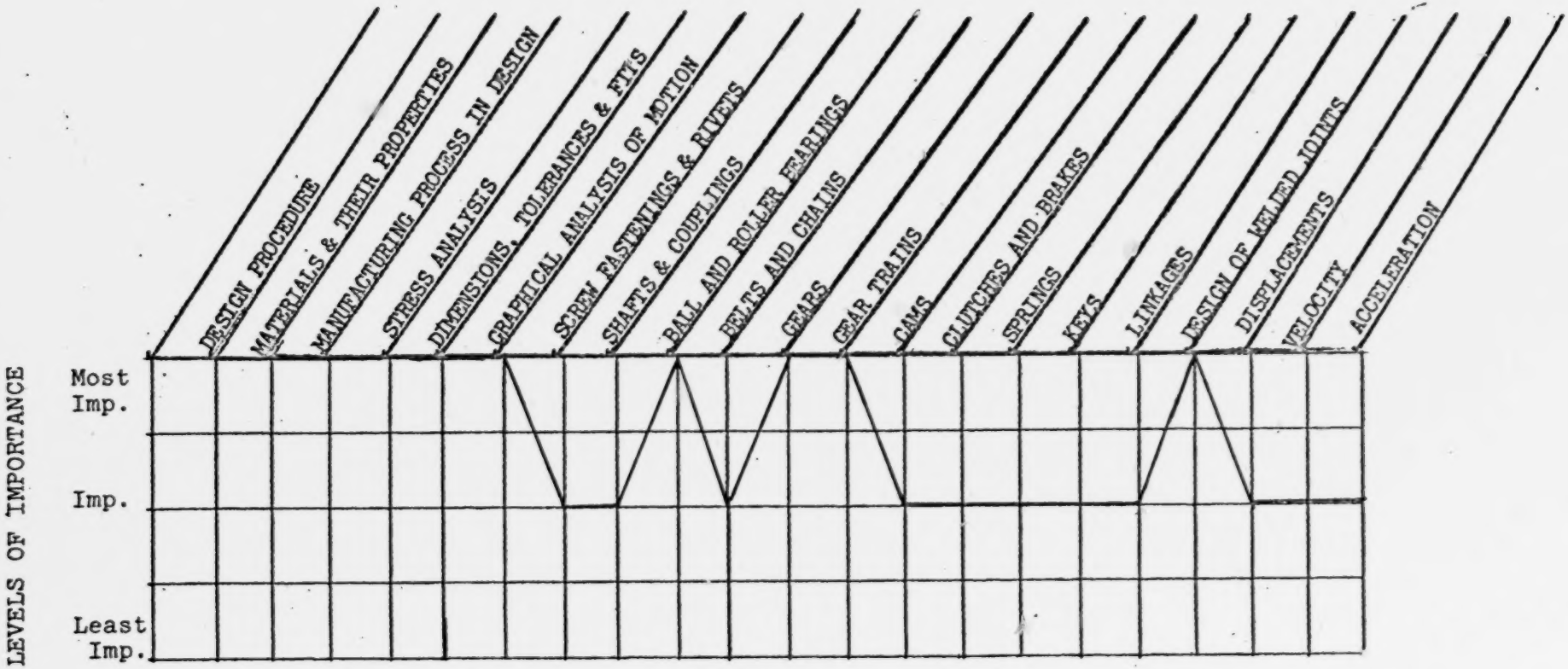

FIGURE 11

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY
INTERNATIONAL HARVESTER
(TOOLING ENGINEERING DEPARTMENT)

1074

manufacturing process in design, stress analysis, dimensions, tolerances, and fits, graphical analysis of motion, ball and roller bearings, gears, gear trains, and the design of welded joints.

A distribution of responses for International Harvester (Tooling Engineering Department) to all areas on the questionnaire is shown in Figure 11.

North American Rockwell Corporation

North American Rockwell Corporation specializes in all types of machine works.

The areas considered most important to this industry are design procedure, materials and their properties, manufacture process in design, stress analysis, gears, gear trains, cams, clutches and brakes, and velocity. The one area indicated least important was springs.

A distribution of responses for North American Rockwell Corporation to all areas on the questionnaire is shown in Figure 12.

Plough, Incorporated

Plough, Incorporated is an industry that produces such products as aspirins, cosmetics, and patent medicines. Because of the size of this industry, it was a necessity to construct a Drafting and Design Department along with a Machine Shop Department. The areas indicated as most important are design procedure, materials and their properties, manufacturing process in

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

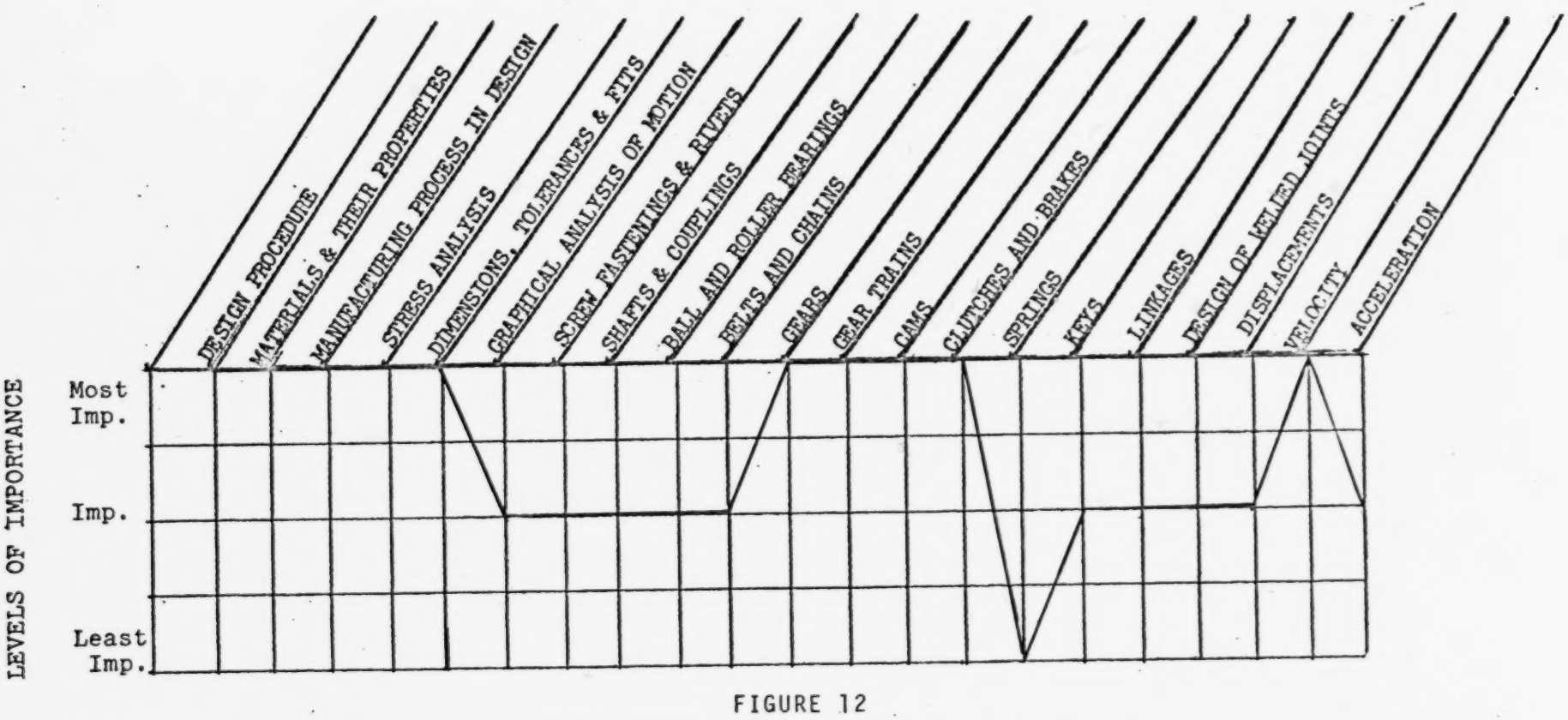

FIGURE 12

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY NORTH AMERICAN ROCKWELL CORPORATION

1076

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

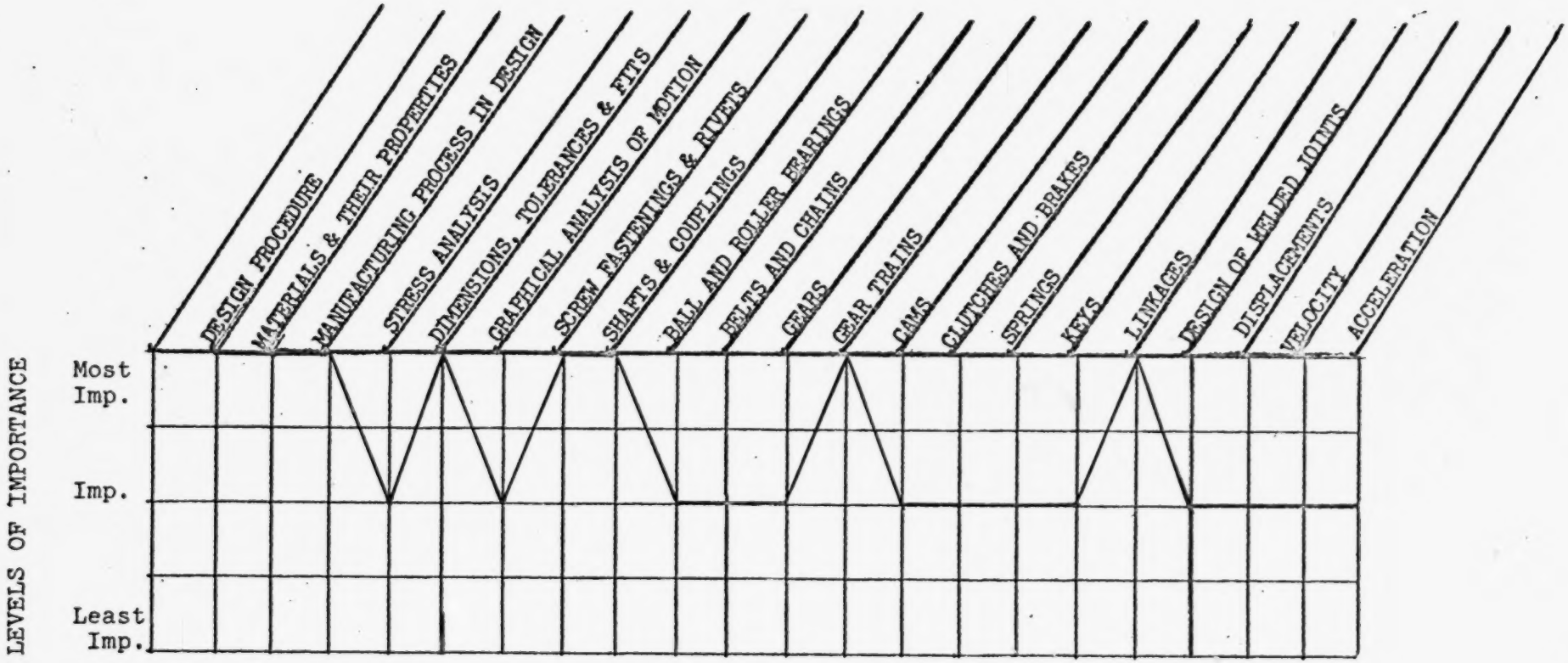

FIGURE 13

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY PLOUGH, INCORPORATED

1077

design, dimensions, tolerances, and fits, screw fastenings and rivets, shafts and couplings, gear trains, and linkages.

A distribution of responses for Plough, Incorporated to all areas on the questionnaire is shown in Figure 13.

William Ellis and Son Iron Works

William Ellis and Son Iron Works is a machine shop that specializes in welding, casting, fabricating, blacksmithing, pattern working, engineering, rolling, and grinding.

The area indicated as being most important is dimensions, tolerances, and fits. The industry employs skilled machinist and draftsmen.

The person being interviewed indicated that the average draftsman is poor at putting dimensions, tolerances, finish marks, bill of materials, and shop notes on drawings.

A distribution of responses for William Ellis and Son Iron Works to all areas on the questionnaire is shown in Figure 14.

William Machine Works, Incorporated

William Machine Works, Incorporated specializes in tools, dies, molds, fixtures, and general machine works.

It was not indicated that any of the areas listed on the questionnaire were most important, but it was indicated that emphasis should be placed on machine drivers such as motors, engines, and pumps. Also additional emphasis should be placed on controls such as pneumatic, electrical, electronic, and hydraulics.

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

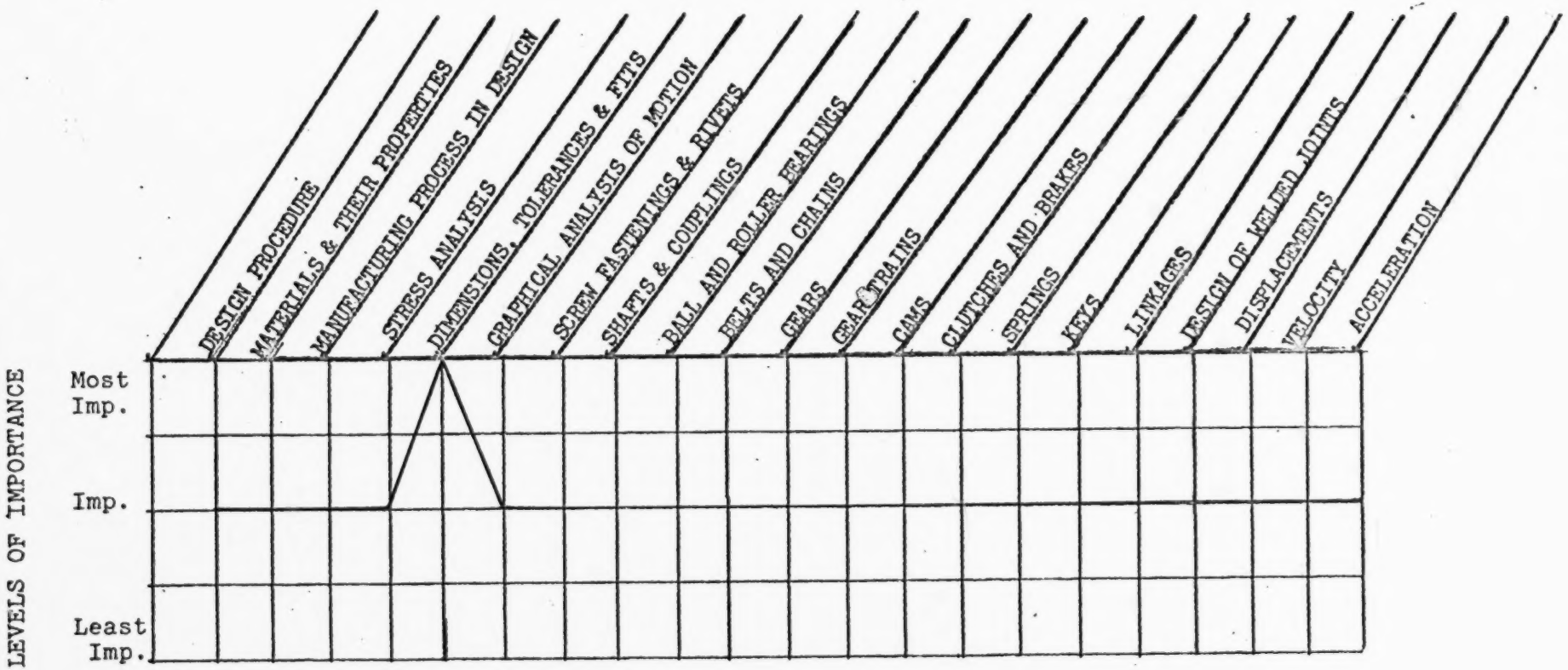

FIGURE 14

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY WILLIAM ELLIS AND SONS IRON WORKS

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

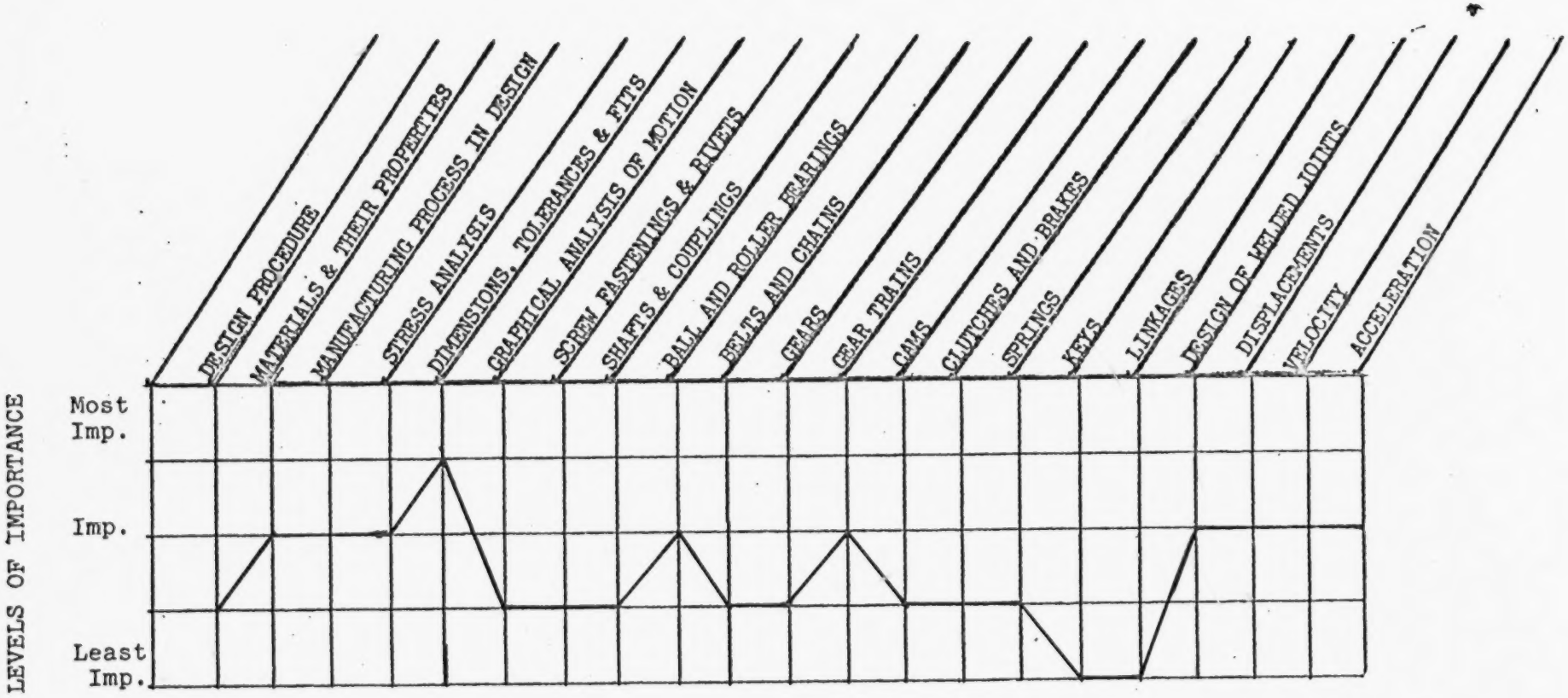

FIGURE 15

RELATIVE IMPORTANCE OF SUBJECT AREAS AS INDICATED BY WILLIAM MACHINE WORKS, INCORPORATED

A distribution of responses for William Machine Works, Incorporated to all areas on the questionnaire is shown in Figure 15.

SUBJECT AREAS INCLUDED IN THE QUESTIONNAIRE

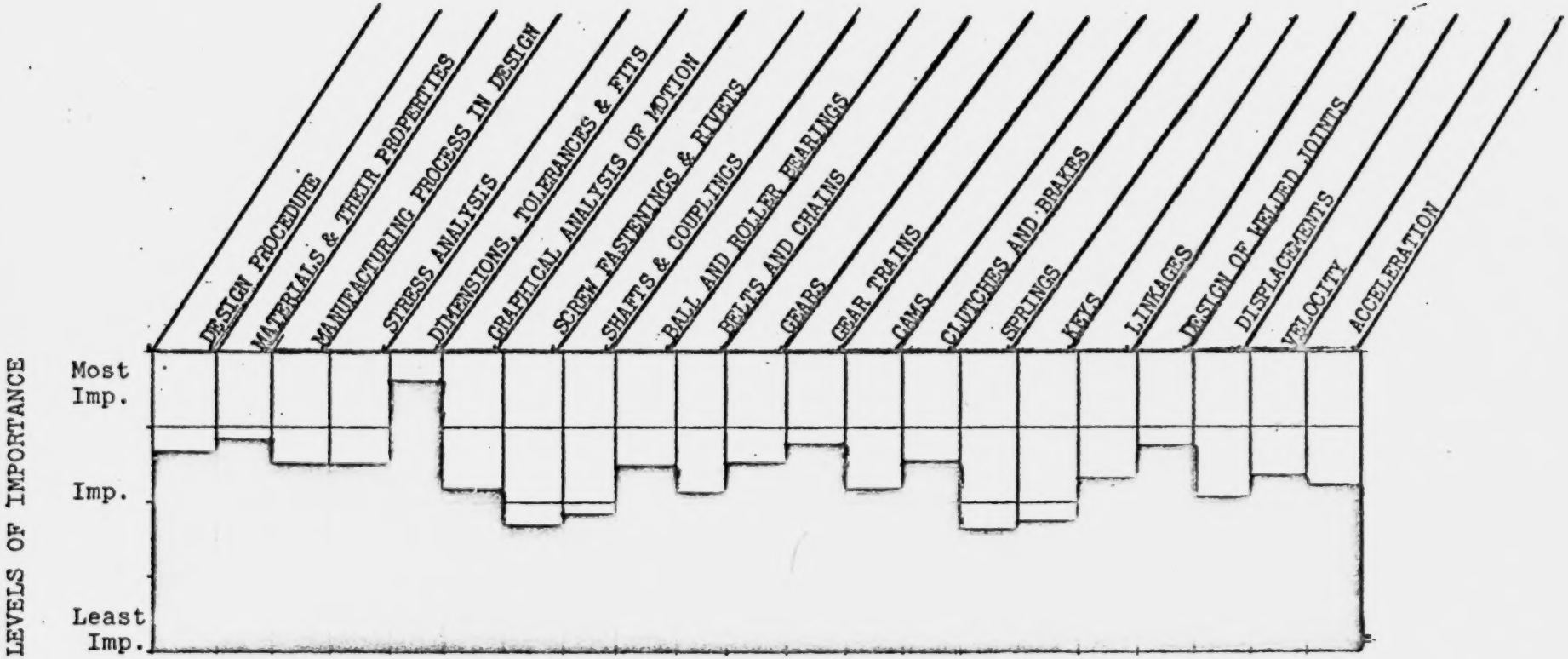

FIGURE 16

AVERAGE OF RESPONSES OF ALL SAMPLES ACCORDING TO LEVELS OF IMPORTANCE

2801 1082

SUMMARY AND RECOMMENDATIONS

Summary

The researcher investigated twenty-one areas of study that could be taught in machine design courses. These twenty-one areas were design procedure, materials and their properties, manufacturing process in design, stress analysis, dimensions, tolerances, and fits, graphical analysis of motion, screw fastenings and rivets, shafts and couplings, balls and roller bearings, belts and chains, gears, gear trains, cams, clutches and brakes, springs, keys, linkages, design of welded joints, displacements, velocity and accelerations.

The industries surveyed in the Memphis area did not suggest a particular program of study for students planning to be employed as machine designers. Because of wide production variations of the industries investigated in this study, their responses to areas on the questionnaire were also varied. What was most important to one industry was to another industry the least important. For this reason, the researcher will not draw conclusions, but make recommendations by developing an outline of those items that were indicated favorable by the samples used in this study.

Recommendations

The following course outline is recommended by the researcher for possible use in machine courses at Memphis State University.

The areas listed on the questionnaire are divided into nine major divisions. They are as follows:

MAJOR DIVISIONS

I. Considerations in Machine Design
II. Strength of Materials Review
III. Fastenings
IV. Power Transmissions
V. Fits and Finishes
VI. Displacement
VII. Velocity
VIII. Accelerations
IX. Graphical Analysis of Motion

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TO FIND THE REASONS THAT MEXICAN-AMERICAN
DROPOUTS GAVE FOR LEAVING SCHOOL AND TO
COMPARE THEIR REASONS WITH THOSE OF OTHER
DROPOUTS, AND (2) TO PRESENT EDUCATIONAL AND
OCCUPATIONAL STATUS PROJECTIONS FOR MEXICAN-
AMERICAN DROPOUTS AND TO COMPARE THESE WITH
MEXICAN-AMERICAN IN-SCHOOL YOUTH IN TERMS OF
ASPIRATIONS, EXPECTATIONS, AND ANTICIPATORY
GOAL DEFLECTION. IT WAS FOUND THAT MEXICAN-
AMERICAN DROPOUTS GAVE THE SAME REASONS FOR
LEAVING SCHOOL AS THE GENERAL DROPOUT
POPULATION, POOR GRADES AND THE NEED TO MAKE
MONEY. THEIR ASPIRATIONS AND EXPECTATIONS
WERE HIGH, A UNIVERSAL PATTERN IN ALL
AMERICAN SOCIETY, ALTHOUGH NOT QUITE SO HIGH
AS FOR MEXICAN-AMERICAN STUDENTS.
IMPLICATIONS DERIVED FROM THE STUDY FINDINGS
FOR POLICY-MAKING AND SOCIAL ACTION ARE
GIVEN. (MF)

MEXICAN AMERICAN DROPOUTS IN THE VALLEY--THEIR REASONS FOR LEAVING SCHOOL AND THEIR EDUCATIONAL AND OCCUPATIONAL STATUS PROJECTIONS

A Thesis

by

SHERRY DIANE WAGES

Submitted to the Graduate College of
Texas A&M University in
partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE

August 1971

Major Subject: Sociology

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Approved as to style and content by:

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(Chairman of Committee)

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(Head of Department)

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(Member)

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August 1971

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ABSTRACT

Mexican American Dropouts in the Valley--Their Reasons for Leaving School and Their Educational and Occupational Status Projections.

(August 1971)

Sherry Diana Wages, B.S., Texas Woman's University

Directed by: Dr. William P. Kuvlesky

The first objective of this thesis was to analyze the reasons Mexican American dropouts gave for leaving school. The second objective was to analyze the educational and occupational status projections of Mexican American dropouts and to compare these results to those of their in-school age peers.

Data on the Mexican American youth involved in this study were obtained through interviews performed in four selected counties in south and southwest Texas -- Dimmit, Maverick, Starr, and Zapata. Information on 596 Mexican American students was gathered during the spring of 1967. Comparable information on 74 Mexican American school dropouts was obtained during February of 1968.

In Texas, the Mexican Americans have the highest dropout rate than any other ethnic group, yet only one other dropout study (Wilson, 1953) could be found involving Mexican American respondents. It was concluded from the findings in this thesis that poor grades for the females and to make money for the males were the most important reasons given by the dropouts for leaving school.

The concept that individuals maintain status projections

which direct them toward future placement at a particular level in a number of different social structures (in this case, education and occupation) provided the basis for the conceptual framework used in this thesis. A recently developed multi-dimensional paradigm constructed by Kuvlesky and Bealer was utilized to analyze the variables for this investigation, which included the three major parts of status projections: (1) aspirations; (2) expectations; and (3) anticipatory goal deflection. In the past, research on status projections of youth have applied only to in-school youth. Now for the first time this same conceptual scheme on status projections of youth was being applied to school dropouts.

From the findings of the analysis, it was generally concluded that the Mexican American male and female dropouts studied were not very similar in their educational status projections. A majority of the dropouts desired and expected high school graduation or even higher levels of education. However, their expectations were lower than their aspirations. The girls had higher educational expectations than the boys, with 20% of the girls expecting to be college graduates, as compared to none of the boys expecting this level of educational attainment. Almost half held strong intensities for their educational aspirations, but a majority were not very certain of their educational expectations. Although the boys had lower expectations than the girls, they were more certain of their educational expectations than were the girls. Over half of the dropouts experienced no deflection from their educational goals,

but when it did occur, it was, for the most part, negative.

The occupational projections of the Mexican American male and female dropouts were even more divergent than were their educational projections. Almost three-fourths of the dropouts desired intermediate level jobs, which included managerial, clerical and sales, and skilled work. The females had higher occupational aspirations than did the males, with almost one-third of the females, as compared to only 5% of the males, desiring high level jobs. A majority expressed strong intensity for their occupational aspirations. Both expressed lower expectations than aspirations, with over half of the males expecting intermediate level jobs, and over half of the females expecting low level jobs. None of the females desired to be housewives, but 43% did expect to be housewives as their highest level of occupational attainment. A majority of the dropouts were certain of their expectations, with the females expressing stronger certainty than the males. Over half experienced no deflection from their occupational goals, and when it did occur, it was mostly negative. More of the females than the males experienced negative deflection.

There were substantial differences between the Mexican American dropouts and their in-school age peers involving their educational and occupational status projections. Differences between Mexican American male dropouts and male students and between female dropouts and female students were statistically significant for almost all of the variables. The male and female students held higher

educational and occupational aspirations than did the male and female dropouts. While the largest percent of both groups expressed strong intensities for their educational and occupational aspirations, a greater proportion of the students than the dropouts expressed strong intensity for their educational and occupational aspirations. Both groups expressed lower expectations than aspirations. The dropouts were more certain of their occupational expectations than the students, and the students were more certain of their educational expectations than the dropouts. A majority of both groups experienced no anticipatory goal deflection. When it did occur, it was mostly negative. More of the dropouts than the students showed positive deflection from their educational goals. However, more of the dropouts than the students showed negative deflection from their occupational goals.

Finally, it was concluded that the results of this research brought into question Parsons' assertion that the Spanish American subculture is characterized by an emphasis on Particularistic-Ascriptive values. On the other hand, the results supported Merton's contention that high success goals are a universal pattern in all cultures in American society. Also, this research supported Ginzberg and Tiedeman's theory that youth become increasingly realistic as they leave school and confront the world of work.

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THE PROBLEM

There is wide consensus that the school dropout problem is critical and is becoming more so over time (Schreiber, 1967 4-6; Cervantes, 1966:1-10). Although approximately 40% of American youth drop out before completing high school (Schreiber, 1964:5), the increasing severity of the problem is not due to the proportional increase in the numbers of dropouts -- for they are actually declining relative to the total population -- but is due to the increasing negative consequences of the status of "dropout" itself. The outstanding fact is that in our credential oriented society there are fewer and fewer places for the dropout and it becomes increasingly clear that he has little or no future (Schreiber, 1967: 6).

The general national rise in affluence has enabled increasing numbers of people to afford the luxury of extended formal education for their children. At the same time, jobs have become increasingly specialized and technical, requiring larger amounts of formal education. The dropout has suddenly become a problem because, among other reasons, the range and number of jobs requiring little formal education has drastically declined. His predicament has become all the more visible as more and more people use formal education as the major path to success (Schrieber, 1967:9-10).

The citations on the following pages follow the style of The American Sociological Review.

The consequences of having this negative and degrading social label today of "dropout" is crushing on its impact on life chances. While the stigma associated with the status label of dropout is a difficult enough burden to bear, those filling this position in our society are more often unemployed and, when employed, generally face a lack of job security and extremely low wages. Williard Wirtz, former Secretary of Labor, indicated that the inability of our economy to absorb the dropout is "one of the most explosive social problems in the nation's history" (Cervantes, 1966:5). Not only is there a loss to the youth who drop out of school, in terms of self-fulfillment and economics, but also an economic and manpower loss to the nation (Varner, 1967:46).

The burden of dropout status falls doubly hard on those from ethnic minorities. This produces double negative rank evaluation that makes assimilation and upward mobility truly a "dream." The vast majority of the Mexican American ethnic minority in the southwest, particularly in Texas, suffer this compound status disadvantage. There is little question that in terms of normal socio-economic status indicators the Mexican Americans represent one of the most disadvantaged minorities in our society (Rowan, 1968:38; Heller, 1966:14-16; Anderson and Johnson, 1968:1; Moore, 1966:1). They are the largest minority group in Texas and the southwest region (U.S. Bureau of the Census, 1960: Volume 1, Part 45:63, 345-347; U.S. Bureau of the Census, 1960: Subject Reports PX (2)-IB:2, 36-37). They had the largest population increase between

1950-1960 (Manuel, 1965:22), a disproportionate poverty ratio (Upham and Lever, 1965:13), low occupational achievement (Manuel, 1965-47), and low educational attainment (Skrabanek, 1964). According to the 1960 Census, only 12.3% of the Spanish speaking population in Texas had graduated from high school (Goff, 1966:2). While increasing attention has been given to the dropout problem generally, almost no published data are available on Mexican American school dropouts (Heller, 1966:51-52).

As part of a larger project concerned with investigation of status projections of low-income youth, 596 Mexican American sophomores attending school in four south Texas counties were interviewed in 1967 (Kuvlesky, Wright, and Juarez, 1969). At that time, the researchers were struck by the tendency of past studies on adolescents' aspirations and expectations to exclude dropout age peers, thereby limiting the scope of the generalizations that could be drawn regarding all youth. As a result, it was decided to attempt to include in this study of Mexican American youth, dropout age peers of the sophomore respondents. Subsequently, in 1968, 74 Mexican American teenage dropouts were interviewed in the study area. It is from these Mexican American students and dropouts that the data reported here were obtained.

The broad objective of this thesis was to describe reasons Mexican American school dropouts gave for leaving school and to investigate how their orientations toward future educational and job attainment compared with comparable in-school age peers. These

findings were then compared with past research to see whether or not these Mexican American dropouts differed from other dropouts.

REVIEW OF LITERATURE

Reasons for Leaving School

Recent interest in the dropout problem has developed in the past decade and probably was stimulated by the late President Kennedy's "War on Poverty" and the 1963 campaign to get dropouts back in school. Consequently, numerous investigations have been accumulated on the dropout problem (Cervantes, 1966; Schreiber, 1967; Varner, 1967; Miller, Saleem, and Bryse, 1964). However, most of the relevant empirical research has been aimed at describing the background of the dropouts, the age and grade levels at which they leave school, and their reasons for leaving school. Only a few studies were located which involved dropouts' orientations toward further educational attainment. What is more, relative to the specific concern of this paper, only one empirical study could be found on the problem of the Mexican American dropouts.

In the past, many studies have been done on school dropouts, with emphasis on reasons given by the dropouts for leaving school. Numerous studies demonstrated that dropouts had many reasons for leaving school; however, the most salient reasons appeared to be financial motives and dissatisfaction with the school per se (Bowman and Matthews, 1960; Murk, 1960; U.S. Bureau of Labor Statistics, 1960; Bianchi, 1959; Wolfbein, 1959; Chaloupka, 1958; Segel and Schwarm, 1957; Patterson, 1955; Moore, 1954; Snepp, 1951; Syracuse Baord of Education, 1950; Dillion, 1949; Lanier, 1949).

Other important factors included not being accepted by other students, inability to see the value of education, and social correlates of low socio-economic status (including low educational attainment of parents and family instability). One national study (U.S. Bureau of Labor Statistics, 1960), reporting the major single reason students gave for dropping out of school before graduation was dissatisfaction with school, went on to explain why the researchers felt this reason was held so strong by students. They stated that this dissatisfaction with school was due, in part, to the fact that about 85% of all dropouts in this particular study were behind their normal grade by at least one year. Girls more often than boys gave marriage as a reason for dropping out, while boys more frequently indicated desire for a job (Bowman and Matthews, 1960; Dillion, 1949; Van Dyke and Hoyt, 1958; Murk, 1960; U.S. Bureau of Labor Statistics, 1960; Wolfbein, 1959).

Only one study was found concerning Mexican American dropouts and their reasons for leaving school (Wilson, 1953). The respondents included in this study were 462 Spanish speaking boys and girls who had quit the public high schools prior to graduation. The youths were from fifteen public schools in central, south and southwest Texas (including one school in the Rio Grande Valley). The Spanish speaking pupils were identified by names and verified by interviews, in the seventh grades during 1945-46 and 1946-47 and were followed through the six years of secondary school, this including the time period from 1945-52. Of the dropouts considered

in the study, approximately two-thirds were from the seventh and eighth grades (Wilson, 1953:121).

According to Wilson's study (1953:153), two conditions were predominate in causing Spanish speaking pupils to leave school -- the economic condition of the family and the lack of concern for school work. Although the economic reasons seemed to influence the pupils to a larger extent, the total number of reasons given by dropouts about their lack of interest in school exceeded the total number given as economic reasons (Wilson, 1953:154-155, Table 39).

Status Projections: Conceptual Scheme

In the past few years much research has been directed toward the study of youth's occupational and educational status projections (Kuvlesky and Ohlendorf, 1967; Ohlendorf, Wages, and Kuvlesky, 1967). However, very few investigations have been reported on the occupational and educational status projections of Mexican American youth (Juarez, 1968; Wright, 1968). What is more, only one study (Wilson, 1953) could be found dealing with the status projections of Mexican American school dropouts, and comparisons were hard to make from that particular study because of limitations in instruments used by Wilson.

Before going on to review the relevant research literature on status projections; it will be useful at this point to review the conceptual scheme that will serve to structure this investigation. According to Gottlieb and Ramsey (1964:145-146), achievement

motivation and culturally instilled value-orientations affect status achievement in the United States. This, in part, accounts for the considerable amount of social mobility found in the United States. Achievement motivation compels the individual to excel and the value-orientations direct a person's behavior toward particular high status goals (Rosen, 1959:48-60). The concept that individuals maintain status projections which direct them toward future placement at a particular level in a number of different social structures provides the basis for the conceptual framework used in this thesis.

A status projection is defined as a mental concept that directs a person's energies toward a social object having status significance. Status projections are divided into three major parts: (1) a person or persons; (2) projections; and (3) social objects (statuses) (Kuvlesky and Bealer, 1966).

The conceptional scheme for status projections may be summarized as follows. The first component of status projections is a person or persons. The second component, projections, consists of two major types -- aspirations and expectations (Kuvlesky and Pelham, 1966: Ohlendorf, 1967). The third component, social objects (statuses), vary in kind and in level. In relation to aspirations, "goals can vary in kind and are usually described in reference to a particular social status attribute (occupation, education, income, residence, and so on)" (Kuvlesky and Bealer, 1966:270). These are referred to as status areas. Within these status areas a

variation can be determined along some pre-determined heirarchy of levels of positions. Thus, an object exists at a particular level within a specified status area such as occupation, income, and education.

In summary, status projections consist of three major parts: (1) aspirations; (2) expectations; and (3) anticipatory goal deflection. Aspirations direct the energies of a person toward placement in a number of different social structures that have status significance. Within aspirations, intensity of aspiration can be determined by the relative strength of desire held for the attainment of a goal (Kuvlesky and Bealer, 1966:271-272). Expectations are defined as the probable attainment of a goal in reference to a particular status area, e.g., the educational or occupational level a person realistically expects to attain. Certainty of expectation is the relative strength of a projection toward the attainment of an expectation's social object (Kuvlesky and Bealer, 1966:273). The condition of not having congruent aspirations and expectations is known as anticipatory goal deflection (Kuvlesky and Ohlendorf, 1966). It may be either positive (expectations higher than aspirations) or negative (expectations lower than aspirations), and it may vary in degree.

Status Projections: Review of Past Research

What little empirical data that exist on dropouts' orientations toward future educational attainment indicated that most

dropouts aspired to at least graduate from high school (Sharp and Kristjanson, 1964), but that most did not expect to attain this goal (Youmans, 1959). A national study (U.S. Bureau of Labor Statistics, 1960), indicated that the great majority of both graduates and dropouts regarded their exit from high school as the termination of their education, rather than as an interruption. This assessment was reflected by their job aspirations at the time of the interview. From the stimulus question asked, "What kind of work would you most like to do?" (U.S. Bureau of Labor Statistics, 1960:53), the youth mentioned, with few exceptions, jobs which were already within their reach. Both the boy graduates and dropouts usually said that they would like to be mechanics or welders or some other type of skilled manual worker. The girls, both graduates and dropouts, wanted to be secretaries. In one community, about 10% of the girl graduates and dropouts who reported any job aspirations mentioned nursing or hospital work. Almost no one mentioned teaching. The glamour occupations -- airplane pilot, air line hostess, or those connected with stage, radio, or television -- were not mentioned, nor were the fields of music, the graphic arts or writing (U.S. Bureau of Labor Statistics, 1960:38-39).

The only study on Mexican American dropouts that could be found was done by Joe H. Wilson (1953) and involved only occupational projections. His study involved 462 Spanish speaking boys and girls who quit school. The dropouts were asked "What occupation(s) do you prefer to follow?" and were asked to rank a list of occupations.

Wilson stated that "The two leading preferences (clerk and packer) correspond to the two kinds of employment in which dropouts engage. Two percent of the group prefer occupations requiring additional education" (1953:172). The dropouts were asked to rate their educational preparation, at the time of interview, for the preferred kinds of work. As approximately one-tenth of the respondents indicated deficiency in their preparation for occupational preferences, a large majority considered themselves as sufficiently prepared -- 80.6% (1953:174).

Three studies dealing with the occupational status projections of Mexican American in-school youth could be found by the writer. Detailed findings of these three studies are presented in theses by Juarez (1968) and Wright (1968). In summary, De Hoyos' study (1961) of Mexican American male high school students in Lansing, Michigan, reported that slightly more than half of the respondents had "high levels" of occupational aspiration, while only one-twentieth had "low levels." Their expectations were similar, the differences being that fewer respondents reported high levels of expectations and more reported low levels. Manuel's report (1965) on Mexican American youth of the southwest reported that nearly equal proportions of both sexes, about two-fifths, desired professional and managerial jobs. Approximately half of the females desired secretarial and clerical jobs, while one-fourth of the males aspired to skilled jobs. However, their expectations were much lower than their aspirations. Heller's study (1966) of Los Angeles male high school

seniors reported that a little more than one-third of the respondents aspired to professional or semi-professional occupations.

De Hoyos, Manuel, and Heller's studies were also the only three studies on educational projections of Mexican American in-school youth that could be found by the writer. Detailed analysis of these three studies are presented in the theses of Juarez (1968) and Wright (1968). However, Manuel's study could not be used for comparison because he was concerned with the junior college and college educational levels of aspirations and also, the responses were recorded only as "yes", "no", and "not sure." De Hoyos' study had a similar limitation to Manuel's. Although he studied aspirations and expectations, his study was limited for comparative purposes because of its broadly inclusive educational levels and only responses of "yes" or "no." Only Heller's study is useful for purposes of comparison on educational projections. Heller's study (1966) was concerned only with the expectations of Mexican American and Anglo respondents who were high school seniors in Los Angeles during 1955. All the Mexican American males in this study anticipated high school graduation, with three-fourths of them expecting post high school levels of educational attainment. Slightly over half (57%) expected a post high school vocational or junior college education.

Summary of Review

In summary, the following major empirical generalizations were

established as a result of the review of literature:

1. Reasons dropouts gave for leaving school
   (a) For both the population in general and the Mexican American population, the most salient reasons appeared to be financial motives and dissatisfaction with the school per se.

2. Status projections
   (a) Occupational projections
      (1) Graduates and dropouts wanted to engage in semiskilled or skilled labor and most expected this type of work.
   (b) Educational projections
      (1) Most dropouts aspired to at least graduate from high school, but most did not expect to attain this goal.
      (2) Mexican American in-school youth expected to at least graduate from high school.

After reviewing the research literature, it was apparent that there was a lack of general, concrete knowledge about reasons Mexican Americans gave for leaving school and their status projections and in particular, dropout-in-school comparisons. Only one study (Wilson, 1953), could be found on Mexican American dropouts, and that study dealt only with reasons for leaving school and occupational projections; educational projections were not included in the study. Only three studies (De Hoyos, 1961; Manuel, 1965; Heller, 1966) could be found on occupational projections of Mexican American in-school youth, and only one study (Heller, 1966) could be found that was comparable for our analysis of educational projections of in-school youth. No studies could be found comparing Mexican American dropouts to Mexican American in-school youth or to other ethnic groups. Previous studies appeared to focus on dropouts in general, not using ethnic identity as a control factor.

This study was apparently the first to provide comprehensive data on Mexican American dropouts' educational and occupational status projections. In addition, it provided data comparing Mexican American dropouts to their in-school age peers on their educational and occupational status projections.

SPECIFICATION OF RESEARCH OBJECTIVES

The objectives of the analysis to be reported here were: (1) To report reasons Mexican American dropouts gave for leaving school and to see how their reasons compared to other dropouts studied previously; (2) To report the educational and occupational status projections of Mexican American dropouts and to compare these with Mexican American in-school youth from the same area on the following dimensions of educational and occupational status projections:

1. Aspirations
   (a) Goal levels
   (b) Intensity of aspirations

2. Expectations
   (a) Anticipated levels
   (b) Certainty of expectations

3. Anticipatory goal deflection
   (a) Nature of deflection
   (b) Degree of deflection

In the past, research on status projections of youth have applied only to in-school youth. Now for the first time this same conceptual scheme on status projections of youth has been applied to school dropouts. Data on educational and occupational status projections of Mexican American in-school youth were already available through the research completed by Juarez (1968) and Wright (1968). Thus it was possible to examine the status projections of Mexican American school dropouts and to compare their projections to Mexican American in-school youth from the same area and of the same ethnic group. This research is significant in that it viewed high school dropouts (Mexican Americans) in comparison with the

larger in-school age peer population from the same social universe. It also allowed an expansion of generalizations about status projections of youth.

SOURCE AND COLLECTION OF DATA

Data on the Mexican American youth were obtained through interviews performed in four selected counties in south Texas. As mentioned previously, the data on the Mexican American in-school youth were reported in detail in theses by Juarez (1968: Chapter 3) and Wright (1968: Chapter 3).

In the spring of 1967, data were collected from high school sophomores in two southwest Texas counties and two south Texas counties: Dimmit, Maverick, Starr, and Zapata. These counties were selected on the basis of several criteria: a high proportion of Mexican Americans, low levels of income as compared to the state of Texas as a whole, a high proportion of rural residents, and a non-metropolitan area not contiguous to a metropolitan area (Appendix A, Table 33). Data were obtained from 596 Mexican American boys and girls by means of collectively administered interviews in seven participating schools. Groups of students received a twelve-page questionnaire. After the questionnaires were distributed, the students completed each stimulus question as it was read aloud by the interviewer.

To obtain a list of the dropouts, the sophomores that were interviewed as part of the spring 1967 study were asked to note on the back of the questionnaires they had completed names and addresses of anyone about their age living in their local area but not attending school. This strategy produced a list of 135 youth that

was used as a starting point for the location and interviewing of the dropout age peers within the study area.

Subsequently, during the summer of 1967, a research assistant of Mexican American descent spent several weeks locating each of the dropout prospects and contacting them for permission to be interviewed at a later date. In January of 1968, letters were sent to each prospective respondent indicating that interviewers would contact them. During February of 1968, 82 school dropouts were interviewed by graduate students from Texas A&M University. Of the 82 youth interviewed, eight were deleted from the study because (1) they had completed eleven or more years of school; (2) they were enrolled in school at the time of the interview; or (3) they were not of Spanish American descent. Table 1 indicates that the dropouts and the in-school youth were almost evenly proportionately distributed by county.

The same questionnaire that was given to the sophomores in south Texas in the spring of 1967 was given to the school dropouts interviewed from the same area in February, 1968. It included variables about the youth's status orientations with additional questions about their dropout situation. Each dropout was interviewed individually. The questionnaire was administered under a wide variety of conditions, including in homes, in cars, on front porches, and on the youth's jobs. In many cases it was difficult to maintain the kind of privacy deemed desirable for personal interviews without harming the rapport and perhaps losing the cooperation

Table 1. Location and Number of Respondents Used in South Texas Study

Location	Dropout (N = 74)	In-School (N = 596)
Maverick County	35%	34%
Eagle Pass	30	34
Quemado	4	0
El Indio	1	0
Dimmit County	18	12
Carrizo Springs	7	8
Big Wells	1	0
Asherton	10	4
Zapata County	15	9
Zapata	5	9
San Ygnacio	10	0
Starr County	32	44
Rio Grande City	18	27
Salineno	1	0
Roma	4	12
San Isidro	5	5
Delmita	4	0
TOTALS	100%	100%

of the respondent. The interviewer read each stimulus question aloud and the respondent recorded his own answers on the questionnaire. Spelling problems were evident when the youth were asked to write their answers to the open-ended question about the types of occupations they desired and expected. Many of the girls had trouble spelling such words as "housewife." Some boys had trouble spelling such words as "welder" or "farmer." Most of the youth accepted the interviewers into their homes. In some homes the parents, particularly the mothers, would stand over their children as the youth answered the questionnaire. Some of the parents thought the interviewers were trying to get their children jobs. Others suspected the interviewers were from the school or the Welfare Department, checking on their children.

Respondents

Comparison of In-School and Dropout Age Peers

The following is a brief comparison of the two study groups, with some additional information on the dropouts pertaining to their dropout situation. For a more detained description of the Mexican American in-school youth, see theses by Juarez (1968:20-29), and Wright (1968:38-44).

Most of the Mexican American youth were from relatively large families. Over three-fourths of both study groups came from families in which both parents were alive, living together (Appendix C, Table

35). Twice as many dropouts (12%) as the in-school youth (6%) came from families in which the parents were separated or divorced.

In both study groups, the fathers were the major money earners in the household in over half of the cases (Appendix C, Table 36). However, the dropouts identified 23% of the major money earners as brothers or sisters or other, as compared with only 16% of the in-school youth.

The types of occupations held by the major money earners in both study groups were fairly similar (Appendix C, Table 37). Over half of each group (64%-Dropout; 55%-In-School) was employed in either skilled blue collar, operatives, or unskilled labor, with the largest percent of both groups employed in unskilled labor (which included farm laborer or laborer). Twice as many of the major money earners in the dropouts' families (11%) than in the in-school youth's families (5%) were either unemployed or were housewives. Twice as many of the earners in the in-school group were engaged in professional or managerial occupations (17%), as compared to only 8% of the dropouts' group.

The educational attainment of the parents of both study groups were also fairly similar (Appendix C, Table 38). A majority of both groups had less than a high school education. None of the dropouts' fathers were high school graduates and only three of their mothers were. Almost 10% of the in-school youth's parents were high school graduates. None of the dropouts' parents were college graduates, and only 43 of the parents of the in-school youth

were college graduates.

In summary, it can be concluded that the family backgrounds of the dropouts and their in-school age peers were somewhat similar. Most of the youth's parents were living and lived together. The major money earners in the families were the fathers, holding low level occupations, with the largest percent engaged in unskilled labor. Over half of the parents had less than a high school education.

Background Information on Dropouts

Almost all of the Mexican American dropouts were at least 16 years old at the time of the interview -- mean age at time of interview was 17 1/2 years old -- and only 10 were married (Appendix C, Table 39). On the average, the respondents indicated that they left school at age 16 (Appendix C, Table 40) and the eighth grade was the last school year they completed (Appendix C, Table 41). More than half of the respondents indicated that they had left school before completing the ninth grade. Only a few of the dropouts had received any type of technical training since leaving school, mostly through the Neighborhood Youth Corps -- and the vast majority of this was "training" for unskilled types of work (Appendix C, Tables 42 and 43).

Of particular interest in illuminating part of the problem these youth faced in school is the fact that they spoke Spanish more than English in the home -- seven out of ten spoke Spanish

with their parents (Appendix C, Table 44). In addition, the majority spoke at least as much Spanish as English with their friends in the neighborhood and at work. In this regard, an important sex difference was observed: while a majority of boys spoke Spanish only with their friends, markedly fewer girls (about one-third) indicated this.

Direct observations made during the interview sessions with the dropouts also helped provide some understanding of the type of situation facing these youth. Almost all of them came from very large families often crowded together in dwellings of two or three rooms. Rarely were any reading materials observable in their homes, and very often even television sets appeared to be absent. In many cases abject poverty was observable in the dilapidated nature of the external structure and internal furnishings of the home and in the extremely poor clothing worn by the children. All in all, it would be safe to conclude that almost every respondent involved here had little or no opportunity for privacy in the home and could not have received much in the way of financial resources from his family for school considerations.

INDICATORS AND MEASUREMENTS

Only a small portion fo the responses contained in the questionnaire were analyzed in this thesis. The questions indicating ethnic membership, sex, reasons for leaving school, and educational and occupational status projections were utilized. To facilitate comparative analysis, the same questionnaire was given to both the in-school youth and their dropout age peers, with additional questions given to the dropouts concerning their dropout situation. These questions were excerpted from the questionnaire and presented in Appendix B, and only brief descriptions of the specific indicators and measurements are provided below.

Ethnic Membership

Ethnic membership was determined by using the responses to four separate questions which asked the respondent to give his name, to indicate whether or not he was of Spanish American ancestry, to indicate the language he used in various social situations, and to indicate the birthplace of his parents.

Sex

Sex was obtained by asking each respondent to circle on the questionnaire the word "male" or "female."

Reasons for Leaving School

The respondents were asked to rate the degree of importance

of involvement of several alternative reasons influencing their decisions to leave school. The reasons provided in a forced choice type instrument included those pertaining to the school situation per se, those representing social pressure outside the school, and those pertaining to financial motivations or marriage. In case a youth had a relatively unique motive not covered by the alternatives, we also provided him with the opportunity to write in other reasons as a free response.

Aspirations

Identically worded fixed-choice stimulus questions were used in both in-school and dropout studies to elicit responses indicating the educational goals of the respondent. The stimulus question used to obtain goal responses asked the youth to indicate the eudcation he would desire if he could have it. The responses were coded in terms of a six-level educational hierarchy (plus "No information").

Responses indicating occupational aspirations were elicited through the use of an open-ended question which instructed the respondent to specify the occupation he would most desire as a lifetime job if he were completely free to choose. The respondent was encouraged to be specific about the occupation he desired and to describe it as fully as possible. The respondents' answers to this open-ended question were classified according to the scheme which is presented and discussed on page 28.

Intensity

Intensity of the respondents' educational and occupational aspirations were indicated by a question that asked the respondents to rank order seven status goals believed to be desired by most young people. The educational and occupational goals were included among alternatives. This operation produced a forced self-ranked hierarchy of importance ranging from scores of one through seven. The lower the score, the stronger the intensity of aspiration indicated. For purposes of meaningful interpretation of the findings as well as for comparison of the findings to those found in the south Texas in-school study, the raw scores were grouped into qualitative cagegories of: Strong (1-2), Intermediate (3-5), and Weak (6-7). These three categories are a modified version of another scale reported by Leonard Reissman (1953:233-242).

Expectations

Identically worded fixed-choice stimulus questions were used to elicit responses indicating the educational and occupational expectations of the respondents. The question used for educational expectation asked the respondent to indicate the education he really expected to attain. The responses were coded in terms of a six-level educational hierarchy (plus "No information"). This question's wording was assumed to reflect the respondent's evaluation of his personal values, abilities, and social situation.

Responses indicating occupational expectations were obtained through the use of another open-ended question which instructed the youth to specify the occupation he actually expects to have most of his life. Again, the respondent was encouraged to be specific about the occupation he anticipated, describing the job in detail if necessary. The wording of this question was such that the occupation indicated would, it was assumed, be one which reflected any personal or social restrictions experienced by the respondent. That is, the respondent would indicate the occupation he anticipated in view of the "realities" of his situation. The word "lifetime" is assumed to evoke the person's long run or ultimate occupational attainment. Again, the respondent's answers were classified according to the scheme which appears on page 28.

Certainty

Certainty of expectation was ascertained with a stimulus question which instructed the respondent to indicate how certain he was of achieving his expected education and occupation. The respondent was to circle one of five alternatives representing varying degrees of certainty along a Likert-type scale. The degree of certainty ranged from very certain to very uncertain. For purposes of the analysis to be done in this paper, the following alternatives were collapsed: "Very certain" and "certain," "Uncertain" and "very uncertain." "Not very certain" was left by itself.

Anticipatory Goal Deflection

Anticipatory goal deflection was determined by comparing the measure of educational goal and educational expectation and by comparing the occupational goal and occupational expectation. If these measures differed, deflection was considered to exist. Negative deflection was judged to exist when the expectation level was lower than the goal level; conversely, positive deflection was indicated when the expectation level was observed to be higher than the aspiration level. In addition to determining the nature of deflection, the "degree" of deflection was determined by the number of level differences involved between goal and anticipated status.

The responses on occupational aspiration and expectation were classified according to a modified form of the Census scheme (Bureau of the Census:1960). The occupational categories used are listed in rank order as follows:

0. No information, or "Don't know"
1. High professional
2. Low professional
3. Glamour
4. Owner, manager, official
5. Clerical and sales
6. Skilled
7. Operatives
8. Unskilled
9. Housewife, other

This method was chosen primarily because of its wide use (Ameen, 1968; Kuvlesky and Ohlendorf, 1966), and because it was used for the in-school Mexican American youth study by Juarez (1968) and Wright (1968). Thus this method permitted better comparison of

findings from various studies.

The first change made in the Census scheme consisted of dividing the classification "professional, technical and kindred' into "high professional," "low professional," and "glamorous." The category "high professional" refers to those occupations usually demanding degrees above the bachelor's, for example, doctor, lawyer, or college professor. "Low professional" denotes those occupations for which the educational requirement is normally only a bachelor's degree, for instance, elementary school teacher. The "glamour" category comprises those occupations having a glamorous connotation and those which are sometimes associated with personal ability rather than with achievement: examples of this type of occupation include entertainer, athlete, actor, and similar occupations.

A further modification of the census scheme was to collapse the classes "clerical and kindred workers" and "sales workers" into the one category "clerical and sales" because of the low frequency of responses involved; this modification is justified also because of the similar nature of the occupations in these categories. Likewise, the "farm owner and manager" responses were included in the managerial category because few respondents indicated an aspiration (N=4) or an expectation (N=3) for this type of job. Another change was to include the responses pertaining to enlisted military and law enforcement jobs in the classification of "operatives and kindred" rather than placing such responses in "craftsmen" and "operatives," respectively, as does the Census. Additional advantages

to using the nine-level modified scheme are that it permits noting differences among relatively high-level goals which would otherwise be missed, and secondly, the finer distinctions made between categories allows detecting anticipatory deflection among high goal and expectation levels.

Data Processing and Statistical Procedures

Responses to the questions outlined above were coded and transferred to Fortran coding forms and then punched onto IBM cards. The forms and cards were independently verified. A random check of forms and cards disclosed an error rate of less than 1% for each item. The data were statistically analyzed by means of Chi-square tests using a confidence level of .05. Facilities of the Texas A&M University Data Processing Center were utilized to obtain frequency and percentage distribution tables and Chi-square tests to be used in the analysis of the data.

FINDINGS: REASONS MEXICAN AMERICAN SCHOOL DROPOUTS GAVE FOR LEAVING SCHOOL

Poor grades and to make money were the two most important reasons given by Mexican American dropouts for leaving school (Table 2). Among school related reasons, problems with teachers, poor grades and a lack of appreciation for subject matter were given importance by substantial numbers of the respondents. Relative to the financial category, making money and a concern about having good enough clothes or money for school were also indicated by substantial proportions of the youth. Few youth indicated social pressure from inside or outside the school, such as teachers or parents, as being important in their decision, and few indicated that they left school because they wanted to get married.

Statistically significant differences were found between the male and female dropouts in only two of the categories -- grades and money. Over half of the males stated that they dropped out of school to make money, while half of the females stated they dropped out of school because of poor grades. Numerous studies noted that dropouts gave many reasons for leaving school; however, the most salient reasons appeared to be financial motives and dissatisfaction with the school per se (Bowman and Matthews, 1960; Murk, 1960). The Mexican American dropouts in this study gave the same reasons for leaving school as the dropout population in general, with their number one reason being poor grades and their number two reason being

Table 2. Mexican American Dropouts' Ratings of Importance of Reasons for Leaving School

Reasons	Percentage Indicating Some or Much Importance		
	Male (N-39)	Female (N=35)	Total (N=74)
School related:			
Couldn't get along with teachers	31%	26%	28%
Had poor grades	39	68	51*
Wasn't learning anything I could use	44	26	35
The principal or school counselor told me to leave	7	3	5
Other students didn't like me	15	15	15
Social pressure outside of school:			
My father wanted me to quit	11	9	9
My mother wanted me to quit	3	3	3
My friends wanted me to quit	5	3	4
Financial/home:			
To make some money	51	31	42*
Didn't have good enough clothes or money to do what other students did	30	21	26
To get married	11	14	12
Other reasons	28	37	31

* Significant at .05 level

to make money. Only one study was found concerning Mexican American dropouts' reasons for leaving school, (Wilson, 1953). Wilson found that two conditions were predominate in causing Spanish-speaking pupils to leave school -- the economic condition of the family and the lack of concern for school work. Wilson's respondents were Mexican American youth from central, south, and southwest Texas who had quit school before high school graduation. The time period of Wilson's study was from 1945-52. Thus, the present study done on the Mexican American dropouts in south and southwest Texas in 1968 showed that over one and a half decades had passed without apparent change in reasons Mexican American youth gave for leaving school.

FINDINGS: STATUS PROJECTIONS OF MEXICAN AMERICAN SCHOOL DROPOUTS

Educational Status

Aspirations

One-fifth of the dropouts desired never to return to school, almost half of the dropouts desired to graduate from high school, and one-third desired additional training beyond high school as their highest level of educational attainment (Table 3). No statistically significant differences were found between the male and female dropouts concerning their educational aspirations. Although a majority of the males and females were ages 17, 18, and 19 at the time of the interview, perhaps the boys felt more reluctant about returning to school due to the fact that there would be so much difference between the dropout boys' ages and the ages of their in-school age peers.

Over three-fourths of the dropouts expressed a desire to return to school. This finding points out that their aspirations were high, when it is considered that these were young people who had dropped out of school and by merely being labeled "dropouts" were having a hard time getting back into school, both financially and emotionally. Emotionally, these youth were having trouble returning to school, for many of these dropouts were several years older than their in-school age peers and they felt out of place or embarrassed if they returned to school.

Almost half of the dropouts expressed a strong desire for their

Table 3. Educational Aspirations of Mexican American School Dropouts

Educational Level	Male (N=39)	Female (N=35)	Total (N=74)
Never go to school again or quit high school	28%	12%	20%
High school graduate	41	51	46
High school graduate plus additional training	13	23	18
College graduate	18	14	16
No information*	0	0	0
TOTALS	100%	100%	100%

* "No Information" not included in Chi-square tabulations.

$x^2 = 4.22$ D.F. = 3 $.20 < P < .30$

educational goals, and nearly one-third expressed an intermediate desire for their goals (Table 4). Although not statistically significant, the females had somewhat higher educational aspirations than the males, with more of the females desiring high school graduation or additional training beyond high school, and the females expressed stronger intensity for their educational aspirations than did the males.

Expectations

In general, almost three-fourths of the dropouts expected either to never go to school again, or to complete high school as their highest level of educational attainment (Table 5). Slightly over one-fourth of the dropouts expected training or schooling beyond high school. Statistically significant sex differences were observed: almost twice as many boys as girls expected never to go to school again. Also, while one-fifth of the girls expected to be college graduates, none of the boys expected to graduate from college.

There were some major differences in the dropouts' expectations as compared to their aspirations. Almost one-third of the dropouts expected never to return to school, as compared to only one-fifth desiring this. Also, almost twice as many dropouts desired than expected college graduation. This is accounted for by the fact that while one-fifth of the females expected to graduate from college, none of the males expected this.

Table 4. Intensity of Educational Aspirations of Mexican American School Dropouts

Intensity	Male (N=39)	Female (N=35)	Total (N=74)
Strong	38%	48%	43%
Intermediate	31	35	32
Weak	26	17	22
No information*	5	0	3
TOTALS	100%	100%	100%

* "No information" not included in Chi-square tabulations.

$x^2 = 1.07$ D.F. = 2 $.50 < P < .70$

Table 5. Educational Expectations of Mexican American School Dropouts

Educational Level	Male (N=39)	Female (N=35)	Total (N=74)
Never go to school again or quit high school	41%	17%	30%
High school graduate	33	49	41
High school graduate plus additional training	23	14	19
College graduate	0	20	9
No information*	3	0	1
TOTALS	100%	100%	100%

* "No information" not included in Chi-square tabulations.

$x^2 = 13.11$ D.F. = 3 $.001 < P < .01$

The females maintained higher educational expectations than did the males. Fewer girls expected never to return to school, more girls expected to graduate from high school, and more girls expected to graduate from college. The only change from aspirations to expectations was that while slightly over one-fifth of the females and only a little over one-tenth of the males desired additional training beyond high school, the educational level was reversed in expectations. More males than females expected additional training beyond high school. However, in the final analysis, the females maintained higher educational aspirations and expectations and expressed stronger intensity for their aspirations than did the males.

Only one-third of the youth expressed strong certainty of their educational expectations, with a majority of the dropouts expressing some uncertainty about attaining their educational expectations (Table 6). Statistically significant sex differences were noted between the dropouts. Almost half of the males, as compared to only one-fifth of the females, were certain of their educational expectations. Thus, while the males were expecting lower levels of educational attainment than the females, the boys felt more certain of attaining their expectations than the females. The girls were expressing higher educational aspirations, stronger intensity for their aspirations, and higher expectations than the boys, yet the girls expressed strong uncertainty of attaining their educational expectations. Perhaps the females felt blocked from attaining their educational expectations due to such factors as sex,

Table 6. Certainty of Educational Expectations of Mexican American School Dropouts

Certainty	Male (N=39)	Female (N=35)	Total (N=74)
Certain	46%	20%	34%
Not very certain	38	68	53
Uncertain	13	12	12
No information*	3	0	1
TOTALS	100%	100%	100%

* "No information" not included in Chi-square tabulations.

$x^2 = 6.93$ D.F. = 2 $.02 < P < .05$

finances, their families, or job discrimination. Perhaps the males had worked more in the labor market than the females and by their work experiences, the males had a more realistic view of the type of education they needed or wanted to compete for a job.

Anticipatory Goal Deflection

Anticipatory deflection is an individual measure, arrived at by comparing the individual's aspiration with his expectation. Over half of the Mexican American dropouts did not experience anticipatory goal deflection (Table 7), meaning that their aspirations and expectations were the same. When goal deflection did occur, it was, for the most part, negative for both sexes, meaning that their educational expectations were lower than their educational aspirations. No statistically significant differences were found between the sexes. The deflection of the dropouts was usually within one or two degrees, positive or negative (Table 8).

Occupational Status

Aspirations

Because there were only 79 dropouts used in this study, the Chi-square test could not be utilized on the distribution depicted in Table 9, using the original nine categories of jobs to describe their occupational aspirations. Thus, the following is a brief description of the findings.

Table 7. Anticipatory Deflection from Educational Aspirations of Mexican American School Dropouts

Nature of Deflection	Male (N=39)	Female (N=35)	Total (N=74)
None	59%	60%	59%
Positive	12	17	15
Negative	29	23	26
No information*	0	0	0
TOTALS	100%	100%	100%

* "No information" not included in Chi-square tabulations.

$x^2 = 0.44$ D.F. = 2 $.70 < P < .80$

Table 8. Nature and Degree of Anticipatory Deflection from Educational Aspirations of Mexican American School Dropouts

Nature and Degree of Deflection	Male (N=39)	Female (N=35)	Total (N=74)
None	59%	60%	59%
Positive			
+1	10	8	10
+2	2	0	1
+3	0	9	4
+4	0	0	0
+5	0	0	0
Negative			
-1	11	9	10
-2	0	9	4
-3	5	5	5
-4	8	0	4
-5	5	0	3
No information	0	0	0
TOTALS	100%	100%	100%

Table 9. Occupational Aspirations of Mexican American School Dropouts

Occupational Level	Male (N=39)	Female (N=35)	Total (N=74)
High professional	0%	0%	0%
Low professional	5	26	15
Glamour	0	3	1
Managerial	10	0	6
Clerical & sales	5	43	23
Skilled	66	17	44
Operatives	3	0	1
Unskilled	11	11	10
Housewife	0	0	0
No information	0	0	0
TOTALS	100%	100%	100%

The largest percentage of the dropouts, almost half, desired skilled jobs, with the second largest percentage, over one-fifth, desiring clerical and sales work. This is accounted for by the fact that while a majority of the males desired skilled work, almost half of the girls desired clerical and sales work. None of the dropouts desired high professional jobs, and only 15% desired low professional jobs; five times as many girls as boys desired these types of jobs. An equal proportion of boys and girls desired unskilled work. None of the girls indicated a desire to be housewives.

In order to more adequately describe the levels of occupations desired by the Mexican American dropouts, the original nine occupational categories were collapsed into three broader levels, as shown in Table 10. According to some researchers in the field of occupations, the resulting three goal levels -- high, intermediate, and low -- are more meaningful than the often used two-class occupational categories such as blue collar and white collar (Kuvlesky and Ohlendorf, 1966). Also, by this collapsing, Chi-square test could be utilized to determine if male-female differences exist beyond chance consideration.

Almost three-fourths of the youth had intermediate occupational goals, while the remaining one-fourth had either high or low level occupational goals. Statistically significant differences were found between the males and females. Six times as many females as males had high occupational goals. A greater proportion of the

Table 10. Occupational Aspirations, Using High, Intermediate, and Low Level Categories* of Mexican American School Dropouts

Occupational Level	Male (N=39)	Female (N=35)	Total (N=74)
High	5%	29%	16%
Intermediate	82	60	72
Low	13	11	12
No information**	0	0	0
TOTALS	100%	100%	100%

* High - High Professional, Low Professional and Glamour
Intermediate - Managerial, Clerical & Sales, and Skilled
Low - Operatives, Unskilled, and Housewife

** "No information" not included in Chi-square tabulations.

$x^2 = 7.55$ D.F. = 2 $.02 < P < .05$

males than the females had intermediate goal levels, which included managerial, clerical and sales, and skilled work.

Over half of the Mexican American dropouts indicated a strong desire for their occupational goals (Table 11). Only one-third of the dropouts indicated an intermediate desire and less than one-tenth indicated a weak desire for their occupational goals. There were no statistically significant sex differences.

Expectations

Again, because there were only 79 dropouts used in the study, the Chi-square test could not be utilized on Table 12 using the nine categories of jobs to describe their occupational expectations. Thus below is a simple description of the findings.

One-third of the youth expected skilled jobs and almost half expected unskilled work or to be housewives. None expected high professional work and only 6% expected low professional work.

While over half of the males expected skilled work, slightly less than half of the females expected to be housewives. In contrast, while 11% of the females expected low professional jobs, none of the males expected this.

The females tended to expect wider ranges of jobs than the males, with their choices scattered among low professional, clerical and sales, unskilled and housewife. The males' choices clustered around skilled, operatives, and unskilled type jobs.

Table 11. Intensity of Occupational Aspirations of Mexican American School Dropouts

Intensity	Male (N=39)	Female (N=35)	Total (N=74)
Strong	59%	57%	58%
Intermediate	33	37	35
Weak	6	6	6
No information*	2	0	1
TOTALS	100%	100%	100%

* "No information" not included in Chi-square tabulations.

$x^2 = 0.08$ D.F. = 2 $.95 < P < .98$

Table 12. Occupational Expectations of Mexican American School Dropouts

Occupational Level	Male (N=39)	Female (N=35)	Total (N=74)
High professional	0%	0%	0%
Low professional	0	11	6
Glamour	0	3	1
Managerial	8	0	4
Clerical & sales	5	23	13
Skilled	54	3	30
Operatives	10	0	6
Unskilled	23	17	20
Housewife	0	43	20
No information	0	0	0
TOTALS	100%	100%	100%

As was done with occupational aspirations, the Mexican American dropouts' occupational expectations were collapsed into three broad occupational levels -- high, intermediate, and low (Table 13). Only 7% of the youth had high expectations, while nearly half expected intermediate and nearly half expected low level occupations.

There were statistically significant differences between the males and females concerning their occupational expectations. A majority of the males expected intermediate level jobs, while a majority of the females expected low level jobs. Fourteen percent of the females as compared to none fo the males expected high level jobs. Overall, the males tended to have higher occupational expectations than the females. Thus, while the females expressed higher aspirations, the males expressed higher expectations.

A majority of the youth felt certain that they would attain their occupational expectations (Table 14). About one-third said that they were not very certain, and slightly over one-tenth expressed strong uncertainty about their expected jobs.

Statistically significant differences existed between the sexes. One-fifth more of the females than the males were certain of their occupational expectations. Eight times as many males as females were uncertain of their occupational expectations. Although the boys showed higher occupational expectations than the girls, the boys expressed stronger uncertainty about attaining their expectations. Perhaps this was due to the fact that the boys had been in the labor market more than girls and they knew more

Table 13. Occupational Expectations, Using High, Intermediate, and Low Level Categories* of Mexican American School Dropouts

	Male (N=39)	Female (N=35)	Total (N=74)
High	0%	14%	7%
Intermediate	67	26	47
Low	33	60	46
No information**	0	0	0
TOTALS	100%	100%	100%

* High - High Professiona, Low Professional, and Glamour
Intermediate - Managerial, Clerical & Sales, and Skilled
Low - Operatives, Unskilled, and Housewife

** "No information" not included in Chi-square tabulations.

$x^2 = 14.98$ D.F. = 2 $P < .001$

Table 14. Certainty of Occupational Expectations of Mexican American School Dropouts

Certainty	Male (N=39)	Female (N=35)	Total (N=74)
Certain	43%	63%	52%
Not very certain	31	31	31
Uncertain	23	3	14
No information*	3	3	3
TOTALS	100%	100%	100%

* "No information" not included in Chi-square tabulations.

$x^2 = 6.87$ D.F. = 2 $.02 < P < .05$

realistically what kinds of jobs they could attain.

Anticipatory Goal Deflection

Anticipatory deflection is an individual measure, arrived at by comparing the individual's aspiration with his expectation. Table 15 shows that over half of the Mexican American dropouts experienced no anticipatory deflection, meaning that over half of the youth studied expected to obtain their occupational goals. The other half of the youth did experience anticipatory goal deflection, and a majority of this deflection was negative. Less than one-tenth experienced positive deflection.

Statistically significant differences were observed between the males and females. Twice as many males as females experienced no deflection, three times as many males as females experienced positive deflection, and three times as many females as males experienced negative deflection.

Thus, while the females were expressing higher occupational aspirations than the males and they were even expressing a fairly strong desire for their occupational goals, their occupational expectations were lower than the males, and they were very certain of their low occupational expectations.

The degree of deflection of Mexican American dropouts from their occupational goals was quite varied (Table 16). Positive deflection involved only one or two degrees of deflection, but negative deflection ranged from one to seven degrees of deflection,

Table 15. Anticipatory Deflection from Occupational Aspirations of Mexican American School Dropouts

Nature of Deflection	Male (N=39)	Female (N=35)	Total (N=74)
None	67%	37%	53%
Positive	10	3	7
Negative	23	60	40
No information*	0	0	0
TOTALS	100%	100%	100%

* "No information" not included in Chi-square tabulations.

$x^2 = 10.76$ D.F. = 2 $.001 < P < .01$

Table 16. Nature and Degree of Anticipatory Deflection from Occupational Aspirations of Mexican American School Dropouts

Nature and Degree of Deflection	Male (N=39)	Female (N=35)	Total (N=74)
None	67%	37%	53%
Positive			
+1	8	3	6
+2	2	0	1
+3	0	0	0
+4	0	0	0
+5	0	0	0
Negative			
-1	3	2	3
-2	10	0	5
-3	0	22	11
-4	5	17	11
-5	3	0	1
-6	2	5	4
-7	0	14	5
No information	0	0	0
TOTALS	100%	100%	100%

with over one-fifth experiencing three or four degrees of negative deflection.

Over one-third of the females, as compared to only 5% of the males, showed negative deflection three to four degrees. Fourteen percent of the females showed negative deflection of seven degrees, as compared to none of the males. Thus again this brings out the fact that the females' occupational levels varied from high to low and covered more categories than the males.

Summary of Findings on Educational and Occupational Projections of Mexican American School Dropouts

Summarized findings reported in Table 17 show that statistically significant differences were found between male and female dropouts for the variables of educational expectations, occupational aspirations and expectations, certainty of educational and occupational expectations, and anticipatory deflection from occupational goals. From the findings of the analysis reported here, it can be generally concluded that the male and female Mexican American dropouts studied were not very similar in their educational and occupational projections. Specific conclusions drawn are as follows:

1. Aspirations
   (a) There were no statistically significant differences between the Mexican American male and female dropouts concerning their educational aspirations. Over half of the dropouts desired to return and graduate from high school, and slightly over one-third desired additional training or schooling beyond high school.
   (b) Statistical significant differences existed between

Table 17. Description of the Educational and Occupational Status Projection Relationships and Summary of Chi-Square Significance for Mexican American Male and Female Dropouts

Table	Dimension	P at .05*	Nature of Male-Female Differences
13	Educational Asp.	NS	None
20	Occupational Asp.	S	Females higher than males
14	Intensity of Educational Asp.	NS	None
21	Intensity of Occupational Asp.	NS	None
15	Educational Exp.	S	Females higher than males
23	Occupational Exp.	S	Males higher than females
16	Certainty of Educational Exp.	S	Males greater than females
24	Certainty of Occupational Exp.	S	Females greater than males
17	Anticipatory Deflection from Educational Goals	NS	None
25	Anticipatory Deflection from Occup. Goals	S	Males greater than females

*Chi-square test for sex differences among Mexican American dropouts.

the males and females concerning their occupational aspirations. Almost three-fourths of the dropouts desired intermediate level jobs, such as managerial, clerical and sales, and skilled work.

(c) The dropouts expressed stronger intensity for their occupational goals than they did for their educational goals.

2. Expectations
   (a) The females had higher educational expectations than the males, while the males maintained higher occupational expectations than the females.
   (b) The males expressed stronger certainty for their educational expectations than the females, and the females expressed stronger certainty for their occupational expectations than the males.
   (c) The dropouts expressed stronger certainty about attaining their occupational expectations than about attaining their educational expectations.

3. Anticipatory goal deflection
   (a) Over half of each group experienced no deflection from their educational and occupational goals, and when it did occur, it was, for the most part, negative.
   (b) More of the dropouts showed negative deflection from their occupational goals than from their educational goals.
   (c) More females than males experienced negative deflection from their occupational goals.

What little empirical data that exists on dropouts' projections toward future educational attainment indicated that most dropouts aspired to at least graduate from high school (Sharp and Kristjanson, 1964), but that most did not expect to attain this goal (Youmans, 1959). The present study showed that over half of the Mexican American dropouts desired and expected to return to high school and graduate, with a substantial proportion of the dropouts desiring and expecting additional training or education beyond high school. This is perhaps explained by the fact that some of these Mexican American

dropouts had been in the labor market since dropping out of school, and they saw, perhaps more realistically than the students, what types of jobs were available and what type of education they would need to attain the jobs they desired.

The only other study on Mexican American dropouts that could be found was done by Wilson (1953), and it involved only occupational projections. Wilson asked the dropouts to check from a list of occupations the occupation they preferred to follow. Wilson's study revealed that the two leading preferences were clerk and packer. Most of the dropouts in the current study desired clerical and sales work or skilled work, and most expected skilled work, unskilled work or to be housewives. If "preference" in Wilson's study meant aspirations, then his dropouts and the dropouts in the present study were quite similar in their occupational aspirations.

FINDINGS: DROPOUT AND IN-SCHOOL AGE PEERS COMPARED ON THEIR STATUS PROJECTIONS

Educational Status

Aspirations

There were substantial statistically significant differences between the Mexican American dropouts and their in-school age peers (Table 18). The students had higher educational aspirations than did the dropouts, for over half of the students desired to be college graduates, while almost half of the dropouts desired high school graduation as their highest level of educational attainment. One-fifth of the dropouts desired never to return to school again, as compared to less than 1% of the students desiring to quit school. The only category in which the dropouts and students were similar were their desire for additional training beyond high school. Twenty-eight percent of the students as compared to 18% of the dropouts desired additional training beyond high school

There were also statistically significant differences observed between the male dropouts and students and between the female dropouts and students. Over half of the male students desired college graduation, while over half of the dropouts desired either to never to return to school again or high school graduation. Half of the female students desired college graduation, while over half of the dropouts desired high school graduation as their highest

Table 18. Educational Aspirations of Mexican American Dropouts and Their In-School Age Peers

Educational Level	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
Never go to school again or quit high school	28%	0%	12%	0%	20%	0%
High school graduate	41	19	51	21	46	20
High school graduate plus additional training	13	28	23	28	18	28
College graduate	18	52	14	50	16	51
No information	0	1	0	1	0	1
TOTALS	100%	100%	100%	100%	100%	100%

* "No information" not included in Chi-square tabulations.

[1] $x^2 = 92.30$ D.F. = 3 $P < .001$

[2] $x^2 = 55.83$ D.F. = 3 $P < .001$

[3] $x^2 = 149.70$ D.F. = 3 $P < .001$

level of educational attainment.

In expressing intensity of desire for their educational aspirations, statistically significant differences were found between the dropouts and the students (Table 19). Over three-fourths of the students as compared to less than half of the dropouts held strong intensity for their educational aspirations. The females held slightly stronger intensity for their educational aspirations than did the males. Thus, the students expressed higher educational aspirations than did the dropouts, and the students expressed stronger intensity for their aspirations than did the dropouts.

Expectations

The students held higher educational expectations than did the dropouts. As shown in Table 20, there were statistically significant sex differences between the dropouts and the students. Almost one-third of the dropouts, as compared to less than 1% of the students, expected never to go to school again or to quit high school. The dropouts' expectations clustered around either never returning to school or high school graduation, whereas the students' expectations were scattered among high school graduation, high school graduation plus additional training, and college graduation.

Differences were noted between the educational aspirations and expectations of the dropouts and the students. Twenty percent of the dropouts desired and 30% expected never to return to school. In contrast less than 1% of the students desired or expected to

Table 19. Intensity of Educational Aspirations of Mexican American Dropouts and Their In-School Age Peers

Intensity	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
Strong	38%	84%	48%	89%	43%	86%
Intermediate	31	10	35	8	32	9
Weak	26	5	17	3	22	4
No information*	5	1	0	0	3	1
TOTALS	100%	100%	100%	100%	100%	100%

* "No information" not included in Chi-square tabulations.

[1] $x^2 = 42.08$ D.F. = 2 $P < .001$

[2] $x^2 = 41.93$ D.F. = 2 $P < .001$

[3] $x^2 = 84.2$ D.F. = 2 $P < .001$

Table 20. Educational Expectations of Mexican American Dropouts and Their In-School Age Peers

Educational Level	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
Never go to school again or quit high school	41%	0%	17%	1%	30%	1%
High school graduate	33	31	49	31	41	31
High school graduate plus additional training	23	30	14	31	19	30
College graduate	0	39	20	37	9	38
No information*	3	0	0	0	1	0
TOTALS	100%	100%	100%	100%	100%	100%

* "No information" not included in Chi-square tabulations.

[1] $x^2 = 127.76$ D.F. = 3 $P < .001$

[2] $x^2 = 44.76$ D.F. = 3 $P < .001$

[3] $x^2 = 171.83$ D.F. = 3 $P < .001$

quit school. There were no great changes in the percentage of each group desiring and expecting additional training beyond high school. While over 16% of the dropouts desired to be college graduates, only 9% expected this. And while over half of the students desired to be college graduates, only 38% expected this.

As a whole, there were statistically significant differences between the dropouts and the students concerning certainty of their educational expectations (Table 21). While only one-third of the dropouts were very certain of their educational expectations, half of the students stated that they were very certain of their educational expectations. About the same proportion of both groups expressed some uncertainty about their educational expectations. Of interest to note is that while the highest educational level the male dropouts expected was additional training beyond high school, they were still very uncertain that they would attain their expectations.

Anticipatory Goal Deflection

Looking at the respondents as a whole, there were no statistically significant differences between the dropouts and the students concerning anticipatory goal deflection (Table 22). Over half of both groups showed no anticipatory goal deflection. When deflection did occur, it was mostly negative. A larger percent of the dropouts than the students showed positive deflection, and a larger percent of the students than the dropouts showed negative deflection.

Table 21. Certainty of Educational Expectations of Mexican American Dropouts and Their In-School Age Peers

Certainty	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
Certain	46%	49%	20%	50%	34%	50%
Not very certain	38	45	68	44	53	45
Uncertain	13	5	12	5	12	5
No information*	3	1	0	1	1	0
TOTALS	100%	100%	100%	100%	100%	100%

* "No information" not included in Chi-square tabulations.

[1] $x^2 = 3.80$ D.F. = 2 $.10 < P < .20$

[2] $x^2 = 12.26$ D.F. = 2 $.001 < P < .01$

[3] $x^2 = 10.2$ D.F. = 2 $.001 < P < .01$

Table 22. Anticipatory Deflection from Educational Aspirations of Mexican American Dropouts and Their In-School Age Peers

Nature of Deflection	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
None	59%	59%	60%	62%	59%	61%
Positive	12	9	17	5	15	7
Negative	29	31	23	32	26	31
No information*	0	1	0	1	0	1
TOTALS	100%	100%	100%	100%	100%	100%

* "No information" not included in Chi-sqaure tabulations.

[1] $x^2 = 0.51$ D.F. = 2 $.70 < P < .80$

[2] $x^2 = 8.47$ D.F. = 2 $.01 < P < .02$

[3] $x^2 = 5.6$ D.F. = 2 $.05 < P < .10$

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There were statistically significant differences between the female dropouts and students. Over three times as many female dropouts as female students expressed positive deflection.

Deflection usually fell within one, two, or three degrees (Table 23). The female dropouts showed positive deflection for one and three degrees, while the female students showed positive deflection for one degree. The male dropouts showed more negative deflection of four and five degrees than did the male students.

Occupational Status

Aspirations

In looking at the nine categories of jobs (Table 24), it is apparent that the students held higher occupational aspirations than did the dropouts. A majority of both the male and female students expressed a desire for the high occupational categories, while only 15% of the dropouts fell into these categories. Almost three-fourths of the dropouts desired clerical and sales work or skilled work, with over half of the male dropouts desiring skilled work and almost half of the female dropouts desiring clerical and sales work. Only one-third of the students desired clerical and sales work or skilled work. Ten percent of the dropouts as compared to only 2% of the students desired unskilled work. It is interesting to note that while none of the dropouts desired to be housewives, 2% of the female students did desire to be housewives as

Table 23. Nature and Degree of Anticipatory Deflection from Educational Aspirations of Mexican American Dropouts and Their In-School Age Peers

Nature and Degree of Deflection	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
None	59%	59%	60%	62%	59%	61%
Positive	12	9	17	5	15	7
+1	10	6	8	2	10	5
+2	2	2	0	1	1	1
+3	0	1	9	1	4	1
+4	0	0	0	1	0	0
+5	0	0	0	0	0	0
Negative	29	31	23	32	26	31
-1	11	16	9	15	10	15
-2	0	6	9	8	4	7
-3	5	4	5	5	5	5
-4	8	5	0	4	4	4
-5	5	0	0	0	3	0
No information	0	1	0	1	0	1
TOTALS	100%	100%	100%	100%	100%	100%

Table 24. Occupational Aspirations of Mexican American Dropouts and Their In-School Age Peers

Occupational Level	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
High professional	0%	12%	0%	3%	0%	7%
Low professional	5	34	26	51	15	43
Glamour	0	6	3	5	1	6
Managerial	10	7	0	1	6	4
Clerical & sales	5	8	43	29	23	19
Skilled	66	20	17	6	44	13
Operatives	3	4	0	1	1	2
Unskilled	11	5	11	0	10	2
Housewife	0	0	0	2	0	1
No information	0	4	0	2	0	3
TOTALS	100%	100%	100%	100%	100%	100%

their highest level of occupational attainment.

In order to more fully describe the levels of occupations desired by the Mexican American youth, the original nine occupational categories were collapsed into three borad levels, as shown in Table 25. Over half of the students, as compared to almost one-fourth of the dropouts, had high occupational goals. One-third of the students, but almost three-fourths of the dropouts had intermediate occupational goals. Slightly over one-tenth of the dropouts, but less than one-twentieth of the students, desired low occupational level jobs. Thus, the students had much higher occupational aspirations than did the dropouts.

There were statistically significant differences between the male dropouts and the male students. While over three-fourths of the male dropouts held intermediate occupational goals, slightly over half of the students held high occupational goals. Only 5% of the male dropouts had high occupational goals.

There were statistically significant differences between the female dropouts and the female students, with the differences being not as great as was for the males. Over half of the female students desired high level jobs, as compared to only one-third of the female dropouts. Over half of the dropouts, as compared to slightly over one-third of the students, desired intermediate level jobs.

Both the female dropouts and female students showed higher occupational aspirations than did the males. A larger percent of the females held high level occupational goals, whereas more of the

Table 25. Occupational Aspirations, Using High, Intermediate, and Low Level Categories* of Mexican American Dropouts and Their In-School Age Peers

Occupational Level	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=496)
High	5%	52%	29%	59%	16%	56%
Intermediate	82	35	60	36	72	36
Low	13	9	11	3	12	5
No information**	0	4	0	2	0	3
TOTALS	100%	100%	100%	100%	100%	100%

* High - High Professional, Low Professional and Glamour
Intermediate - Managerial, Clerical & Sales and Skilled
Low - Operatives, Unskilled and Housewife

** "No information" not included in Chi-square tabulations.

[1] $x^2 = 34.57$ D.F. = 2 $P < .001$

[2] $x^2 = 16.50$ D.F. = 2 $P < .001$

[3] $x^2 = 45.0$ D.F. = 2 $P < .001$

males held intermediate goal levels.

A majority of both groups expressed strong intensity for their occupational aspirations (Table 26). However, a larger percent of the students than the dropouts expressed a strong intensity for their occupational aspirations. Over one-third of the dropouts, as compared to over one-fourth of the students, expressed an intermediate intensity for their occupational goals. Twice as many dropouts as students expressed a weak desire for their occupational aspirations.

Expectations

The occupational expectations were lower for both study groups, yet the students still maintained higher occupational expectations than did the dropouts (Table 27). The students' expectations ranged over the entire scale, while the dropouts' expectations were more concentrated. Almost half of the dropouts expected clerical and sales work or skilled work, and almost half expected unskilled work or to be housewives. The students' expectations concentrated in the low professional jobs, clerical and sales work, and skilled work.

One-third of the students, as compared to only 6% of the dropouts, held expectations for professional type jobs. As with aspirations, those respondents expecting low professional jobs were a substantially greater proportion than those expecting high professional jobs. None of the dropouts desired or expected high

Table 26. Intensity of Occupational Aspirations of Mexican American Dropouts and Their In-School Age Peers

Intensity	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
Strong	59%	68%	57%	72%	58%	70%
Intermediate	33	29	37	24	35	26
Weak	6	2	6	4	6	4
No information*	2	1	0	0	1	0
TOTALS	100%	100%	100%	100%	100%	100%

* "No information" not included in Chi-square tabulations.

[1] $x^2 = 2.01$ D.F. = 2 $.30 < P < .50$

[2] $x^2 = 3.41$ D.F. = 2 $.10 < P < .20$

[3] $x^2 = 4.4$ D.F. = 2 $.10 < P < .20$

Table 27. Occupational Expectations of Mexican American Dropouts and Their In-School Age Peers

Occupational Level	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=390)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
High professional	0%	6%	0%	2%	0%	4%
Low professional	0	30	11	31	6	30
Glamour	0	2	3	2	1	3
Managerial	8	11	0	1	4	6
Clerical & sales	5	10	23	41	13	26
Skilled	54	24	3	8	30	16
Operatives	10	6	0	1	6	3
Unskilled	23	7	17	2	20	4
Housewife	0	0	43	10	20	5
No information	0	4	0	2	0	3
TOTALS	100%	100%	100%	100%	100%	100%

high professional jobs. While the number of students expecting low professional jobs was less than those desiring low professional jobs, the change was not as great as was for the dropouts. Almost three times as many dropouts desired than expected low professional jobs. While 40% of the dropouts expected unskilled work or to be housewives, only 9% of the students expected this. Only 10% of the dropouts desired unskilled work, but 20% of the dropouts expected to be doing unskilled work. None of the dropouts desired to be housewives, but 20 % did expect to be housewives.

As was done with occupational aspirations, the Mexican Americans' occupational expections were collapsed into three borad occupational levels -- high, intermediate, and low (Table 28). Five times as many students as dropouts expected high level jobs. The same proportion of dropouts and students expected intermediate level jobs. And nearly half of the dropouts, as compared to only slightly over one-tenth of the students expected low level jobs. These findings are accounted for by the following facts. Thirty percent of the students, as compared to only 6% of the dropouts, expected low professional jobs. About the same proportion of the dropouts and students expected clerical and sales work. While almost half of the dropouts expected unskilled work or to be housewives, only 9% of the students expected this.

There were statistically significant differences between the dropouts and the students. Over one-third of the students, as compared to less than one-tenth of the dropouts expected high level

Table 28. Occupational Expectations, Using High, Intermediate, and Low Level Categories* of Mexican American Dropouts and Their In-School Age Peers

Occupational Level	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
High	0%	39%	14%	35%	7%	37%
Intermediate	67	45	26	50	47	47
Low	33	12	60	13	46	13
No information**	0	4	0	2	0	3
TOTALS	100%	100%	100%	100%	100%	100%

* High - High Professional, Low Professional and Glamour
Intermediate - Managerial, Clerical & Sales and Skilled
Low - Operatives, Unskilled and Housewife

** "No information" not included in Chi-square tabulations.

[1] $x^2 = 27.06$ D.F. = 2 $P < .001$

[2] $x^2 = 45.94$ D.F. = 2 $P < .001$

[3] $x^2 = 60.42$ D.F. = 2 $P < .001$

jobs. A larger proportion of the dropouts than the students expected intermediate and low level jobs.

While the occupational expectations were quite similar for the male and female students in all three levels, there was much divergence between the male and female dropouts. Over one-tenth of the female dropouts, as compared to none of the male dropouts, expected high level jobs. Twice as many male dropouts as female dropouts expected intermediate level jobs. And twice as many female dropouts as male dropouts expected low level jobs. Thus the male dropouts held higher occupational expectations than did the female dropouts.

In looking at the certainty the Mexican American respondents held for their occupational expectations (Table 29), it was found that there existed statistically significant differences between the dropouts and the students. Over half of the dropouts as compared to a little over one-third of the students stated strongly that they were certain that they would attain their occupational expectations. In contrast, over half of the students, as compared to less than one-third of the dropouts said that they were not very certain of their occupational expectations.

There were statistically significant sex differences between the male dropouts and male students, and between the female dropouts and female students. The male dropouts showed a slightly stronger certainty for their occupational expectations than did the male students. Over twice as many female dropouts as female

Table 29. Certainty of Occupational Expectations of Mexican American Dropouts and Their In-School Age Peers

Certainty	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
Certain	43%	35%	63%	31%	52%	35%
Not very certain	31	51	31	57	31	52
Uncertain	23	10	3	9	14	10
No information*	3	4	3	3	3	3
TOTALS	100%	100%	100%	100%	100%	100%

* "No information" not included in Chi-square tabulations.

[1] $x^2 = 8.69$ D.F. = 2 $.01 < P < .02$

[2] $x^2 = 14.12$ D.F. = 2 $P < .001$

[3] $x^2 = 14.9$ D.F. = 2 $P < .001$

students expressed strong certainty that they would attain their occupational expectations.

While the students were fairly similar in expressing certainty about attaining their occupational expectations, the dropouts showed much divergence, as there were statistically significant differences between the male and female dropouts. Over half of the female dropouts, as compared to less than half of the male dropouts, expressed strong certainty that they would attain their occupational expectations. While over one-fifth of the male dropouts expressed strong uncertainty about attaining their occupational expectations, only 3% of the female dropouts said this.

Thus, the dropouts held stronger certainty about attaining their occupational expectations than did the students, with over half of the female dropouts expressing strong certainty for their occupational expectations. Perhaps this is best explained by the fact that the dropouts had been in the labor market for a while after dropping out of school. They may have had a better understanding of what type of work they were qualified to do, knowing their limitations of being high school dropouts. Many of the students perhaps had not held jobs yet, and thus their expectations were quite high, yet they were not certain of their occupational expectations, for they did not know what all was required to gain the job they expected.

Anticipatory Goal Deflection

There were no statistically significant differences between the dropouts and the students as a whole (Table 30). Over half of both groups showed no anticipatory deflection from their occupational goals. Almost the same proportion of the dropouts and the students showed positive deflection. Forty percent of the dropouts, as compared to only 29% of the students, showed negative delfection.

The male dropouts and male students were somewhat similar in their anticipatory goal deflection from their occupational goals, with no statistically significant differences noted between them. Over half of each group showed negative deflection.

The female dropouts and female students showed statistically significant differences between their anticipatory deflection from their occupational goals. Almost twice as many students as dropouts showed no deflection. Twice as many dropouts as students showed negative deflection.

Over half of each group showed no deflection from their occupational goals. When deflection did occur, it was, for the most part, negative. Negative deflection occurred more for the dropouts than it did for the students, with the female dropouts showing the most negative deflection. This is accounted for by the fact that while none of the female dropouts desired to be housewives, almost half of the female dropouts did expect to be housewives.

Over half of each group experienced no anticipatory deflection from their occupational goals. Positive deflection occurred for less than 10% of the total population for both students and dropouts.

Table 30. Anticipatory Deflection from Occupational Aspirations of Mexican American Dropouts and Their In-School Age Peers

Nature of Deflection	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
None	67%	60%	37%	61%	53%	60%
Positive	10	9	3	6	7	8
Negative	23	28	60	31	40	29
No information*	0	3	0	2	0	3
TOTALS	100%	100%	100%	100%	100%	100%

* "No information" not included in Chi-square tabulations.

[1] $x^2 = 0.60$ D.F. = 2 $.70 < P < .80$

[2] $x^2 = 10.84$ D.F. = 2 $.001 < P < .01$

[3] $x^2 = 1.3$ D.F. = 2 $.30 < P < .50$

Positive deflection fell within one or two degrees for the dropouts, but ranged from one to five degrees for the students (Table 31).

A larger proportion of the dropouts than the students experienced negative deflection. Negative deflection ranged from one to seven degrees for both groups, with the largest amount of negative deflection concentrating around three or four degrees for both study groups.

The positive deflection for the male dropouts ranged from one to two degrees. The male students' positive deflection ranged from one to five degrees, with the most being one degree of positive deflection.

The female dropouts and female students' anticipatory deflection from their occupational goals ranged from one to seven degrees of negative deflection, with negative deflection concentrating around three and four degrees for both groups. More of the female dropouts than the female students deflected negatively seven degrees from their occupational goals.

Thus while over half of each group showed no anticipatory deflection from their occupational goals, almost half of the dropouts as compared to over one-fourth of the students experienced negative deflection. The female dropouts experienced more degrees of negative deflection than any of the other respondents.

Summary and Conclusion of the Mexican American Dropout and In-School Age Peers' Educational and Occupational Status Projections

Table 31. Nature and Degree of Anticipatory Deflection from Occupational Aspirations of Mexican American Dropouts and Their In-School Age Peers

Nature and Degree of Deflection	Male[1]		Female[2]		Total[3]	
	Dropout (N=39)	In-School (N=290)	Dropout (N=35)	In-School (N=306)	Dropout (N=74)	In-School (N=596)
None	67%	60%	37%	61%	53%	60%
Positive	10	9	3	6	7	8
+1	8	3	3	2	6	2
+2	2	2	0	1	1	2
+3	0	1	0	1	0	1
+4	0	2	0	1	0	2
+5	0	1	0	1	0	1
Negative	23	28	60	31	40	29
-1	3	7	2	2	3	4
-2	10	6	0	3	5	4
-3	0	7	22	12	11	10
-4	5	4	17	7	11	5
-5	3	2	0	1	1	1
-6	2	2	5	1	4	2
-7	0	0	14	5	5	3
No information	0	3	0	2	0	3
TOTALS	100%	100%	100%	100%	100%	100%

Table 32 presents a summary of Chi-square significance and Mexican American dropouts and student status projection relationships. The findings of the analysis point out the conclusion that there were substantial differences between the Mexican American dropouts and their in-school age peers involving their educational and occupational status projections. Differences between Mexican American male dropouts and male students and between female dropouts and female students were statistically significant and only a few similarities were observed. Specific conclusions drawn are as follows:

1. Educational and Occupational Aspirations
   (a) The students held higher educational and occupational aspirations than did the dropouts.
   (b) While the students were similar in their educational and occupational aspirations, the dropouts were divergent: the female dropouts maintained higher educational and occupational aspirations than did the male dropouts.
   (c) While the largest percent of both groups expressed strong intensities for their educational and occupational aspirations, a greater proportion of the students than the dropouts expressed strong intensity for their educational and occupational aspirations.
   (d) The students were similar in their intensities for their educational and occupational aspirations, but the dropouts showed more divergence: a slightly larger percent of the male dropouts expressed strong intensities for their occupational aspirations, and a larger percent of the female dropouts than the male dropouts expressed a strong intensity for their educational aspirations.

2. Educational and Occupational Expectations
   (a) The students held higher educational and occupational expectations than did the dropouts.
   (b) While the students held similar educational and occupational expectations, the dropouts showed divergent expectations: the male dropouts held

Table 32. Description of the Educational and Occupational Status Projection Relationships and Summary of Chi-Square Significance for Mexican American Dropouts and Their In-School Age Peers

Table	Dimension	Male		Female	
		P at .05*	Nature of Differences	P at .05*	Nature of Differences
28	Educational Asp.	S	Students higher than dropouts	S	Students higher than dropouts
35	Occupational Asp.	S	Students higher than dropouts	S	Students higher than dropouts
29	Intensity of Educational Asp.	S	Students higher than dropouts	S	Students higher than dropouts
36	Intensity of Occupational Asp.	NS	None	NS	None
30	Educational Exp.	S	Students higher than dropouts	S	Students higher than dropouts
38	Occupational Exp.	S	Students higher than dropouts	S	Students higher than dropouts
31	Certainty of Educational Exp.	NS	None	S	Students higher than dropouts
39	Certainty of Occupational Exp.	S	Dropouts higher than students	S	Dropouts higher than students
32	Anticipatory Defl. from Ed. Goals	NS	None	S	Dropouts higher than students
40	Anticipatory Defl. from Occup. Goals	NS	None	S	Students higher than dropouts

*Chi-square test for sex differences among Mexican American dropouts and their in-school age peers.

higher educational expectations than did the female dropouts, and a majority of the male dropouts held intermediate job level expectations, as compared to a majority of the female dropouts expecting low level jobs.

(c) The male students held higher certainty for their educational expectations than did the male dropouts and the same was true for the female students and female dropouts.

(d) The female dropouts held stronger certainty for their occupational expectations than did the female students.

3. Anticipatory Goal Deflection

(a) Mexican American male dropouts experienced anticipatory deflection from their educational aspirations more frequently than did the male students; however, not as much deflection occurred between the dropouts and students from their occupational aspirations.

(b) The female dropouts experienced anticipatory deflection more frequently than the female students for both educational and occupational aspirations.

(c) Most of the deflection which occurred among all youth studied was negative.

(d) More of the dropouts experienced positive deflection from their educational goals, but more of the male dropouts than the male students deflected positively from occupational aspirations, and more of the female students than the female dropouts deflected positively from their occupational aspirations.

(e) The dropouts and students usually deflected within one or two degrees from their educational aspirations, but deflected from one to four degrees from their occupational aspirations, with the female dropouts showing the most negative deflection of three or four degrees.

No studies could be found comparing Mexican American dropouts to their in-school age peers on their educational and occupational status projections. Thus, a major contribution of this thesis was to add to the body of knowledge an understanding of how dropouts differ from their in-school age peers concerning their educational and occupational status projections.

IMPLICATIONS

Theory

In the initial statement on status projections it was stated that achievement motivation compels the individual to excell and the value-orientations direct a person's behavior toward particular high status goals (Rosen, 1959:48-60). Although both concepts are vital in the study of status projections, it is with value-orientations that this study is most concerned. The emphasis on value-orientations is due to the value-orientations' importance in distinguishing cultures and the discriminate trends that characterize them (Parsona and Shils, 1954:412).

According to Parsons and Shils, a value-orientation is a "generalized and organized conception influencing behavior of nature, of man's place in it, of man's relation to man, and of the desirable and the non-desirable as they may relate to man-environment and inter-human relations" (Parsons and Shils, 1954:411). Cultural patterns are defined by what Parsons terms pattern variables. The pattern variables are dichtomous alternatives of action from which a person must choose before any situation will have a conclusive meaning. According to Parsons, there are five pattern variables: (1) Affectivity vs. Affective-neutrality, (2) Self-orientation vs. Collectivity-orientation, (3) Universalism vs. Particularism, (4) Ascroption vs. Achievement, and (5) Specificity vs. Diffuseness (Parsons and Shils, 1954:76-79). The combinations of pattern variables of

Universalistic-Achievement and Particularistic-Ascriptive, according to Parsons, are principle types of social structures. In light of this belief, Parsons maintains that the Spanish American is characterized by the Particularistic-Ascriptive combination of pattern variables (Parsons, 1951:199). This pattern has as its primary concern the expressive interests and is less concerned with the opportunity to shape the situation through achievement (Nall, 1962: 28-41).

Another theoretical perspective directly relevant to the research problem is Robert K. Merton's proposition that inculcation of high success goals of various kinds constitute a patterned characteristic that cuts across subcultural differentiation in our society (1951:132-133). The majority of extensive past research on status aspirations offers support for this contention (Ohlendorf, 1967:87; Obordo, 1968:76; Ameen, 1968:75; Juarez, 1968; and Wright, 1968). While most of this research indicates that significant differences in level of status aspirations exist between significantly differentiated segments of the society, the same date appear to offer strong evidence that all types of youth generally maintain high goals. Ohlendorf (1967:78), Ameen (1968:70), and Pelham (1968:150-151) find that lower class youth have high levels of educational and occupational aspirations and expectations.

Although this research was concerned only with the status projections of one ethnic group -- the Mexican American school dropouts -- its findings can be related to the proposition of

whether or not Mexican American youth have high or low status projections than other youth. Parsons asserts that the Spanish American subculture is characterized by a Particularistic-Ascriptive value configuration (Parsons, 1951:199), meaning that the Mexican American youth would have lower educational and occupational projections than comparable Anglo youth. While the data does not provide a direct test of Parsons' proposition, the study brings into question the particular inference pertaining to low educational and occupational projections of Mexican American youth. In general, the Mexican American dropouts desired and expected high educational and occupational levels, although the levels were not quite as high as for the Mexican American students.

The results on educational and occupational aspirations, while bringing into question the validity of Parsons' assertion about Spanish Americans, provide support for Merton's contention that implantation of high success goals exists as a general pattern among differentiated segments of American society (1951:132-133). Thus this research also supports the contention that lower class youth have high levels of educational and occupational aspirations and expectations (Ohlendorf, 1967:78; Ameen, 1968:70; Pelham, 1968: 150-151; Obordo, 1968:76; Juarez, 1968; and Wright, 1968).

Ginzberg (1952) and Tiedeman (1961), in their theories on vocational development, state that youth become increasingly realistic as they leave school and confront the world of work. The results of this study on Mexican American dropouts have some very

important implications which substantuate the above theory. The Mexican American dropouts had lower occupational projections than did the students. Over half of the students desired high level jobs, which included high professional, low professional and glamour jobs, and slightly over only one-third of the students expected high level jobs. In contrast, almost three-fourths of the dropouts desired, and almost half expected, intermediate level jobs, which included managerial, clerical and sales, and skilled work. The same percentage of dropouts and students (47%) expected intermediate level jobs. Twelve percent of the dropouts, as compared to only 5% of the students, had low level occupational aspirations, which included operatives, unskilled and housewife. In contrast, almost half of the dropouts, as compared to only 13% of the students expected low level jobs. This high percentage of dropouts expecting low level jobs is accounted for by the fact that while none of the female dropouts desired to be housewives, 43% of the female dropouts, as compared to only 10% of the female students, expected to be housewives.

Thus the findings seem to substantuate that the dropouts more realistically see what place they will take in the labor market than do the students. For many of the dropouts had already been working before they participated in this study, and it is assumed that they used their work experiences to help them decide on their educational and occupational projections, especially their expectations. Over half of the male dropouts expected skilled work, and almost half of

the female dropouts expected to be housewives. The dropouts expressed stronger certainty about their occupational expectations than did the students.

Research

Although much research in the past had focused on dropouts and their problems, only Wilson's study (1953) could be found dealing with Mexican American dropouts. Previous studies appear to focus on dropouts in general, not using ethnic identity as a control factor. This study appears to be the most recent study on Mexican American dropouts in the past eighteen years. More research needs to be done on Mexican American dropouts in other parts of the southwest and even other parts of the United States, especially northeastern United States, where many of the Mexican American youth migrate with their families to do field work.

This study also dealt with the educational and occupational status projections of Mexican American dropouts. Only Wilson's study (1953) could be found dealing with status projections of Mexican American youth, and his study dealt only with the occupational projections. Thus, this study is apparently the first to deal with the educational and occupational projections of Mexican American dropouts, in terms of a multi-dimensional framework for analysis.

A few studies have compared Mexican American youth to other ethnic groups concerning their educational and occupational projections, but this study is the first study known by the author that

compares the educational and occupational status projections of Mexican American dropouts to their in-school age peers. Thus, more research is needed in this area so that comparative analysis can be done.

A longitudinal study of the Mexican American dropouts is another area of needed research. Longitudinal analysis would be useful to investigate such areas as changes in educational and occupational projections, attainment of goals and expectations and effects of such attainment, and the relationship of work experience to projections. More research in the future needs to be designed to be more of an analytical nature than a descriptive nature.

In order to ascertain what educational and occupational attainments the dropouts had attained, the questionnaire could have included a question concerning what job, if any, they were holding at the time of the interview. Thus a comparison of what they were actually doing could have been compared to what they desired and expected.

Although suggestions have been made by Juarez (1968) and Wright (1968) to change and improve the conceptual scheme used in this analysis, the author used the same conceptual scheme in order to make this study more comparable to the studies done by Juarez and Wright on the Mexican American students. More research is needed to improve the five dimensional conceptual scheme, using suggestions by Juarez and Wright.

Policy

Findings from this thesis have implications for policy-making and social action. The findings pointed out that a majority of the dropouts left school because of poor grades and to make money. They had little pressure from inside or outside the schools to leave school. Thus, perhaps the schools need to make changes in their curriculum in order to make the subjects of interest to the students.

This study showed that the dropouts spoke more Spanish than English in their homes, and the majority spoke at least as much Spanish as English with their friends in the neighborhood and at work. Thus, perhaps these dropouts are having trouble understanding English and since all the courses are taught in English, this would be a definite drawback for the dropouts in trying to master their course work. Special classes, in addition to regualr English classes, could be held to give extended training in the reading and writing of the English language.

Almost all of the dropouts came from poverty-stricken families. Large families were crowded together into small houses, the children were poorly clothed, and little reading materials were found in the homes. Almost every respondent involved in the study had little or no opportunity for privacy in the home and could not have received much in the way of financial resources from his family for school considerations.

None of the dropouts' fathers had graduated from high school, and only 4% of the dropouts' mothers were high school graduates.

The dropouts stated that they received little or no pressure from their parents to quit school. If anything, it might be assumed that the parents encouraged their children to return to school. A majority of the dropouts desired and expressed to return to school.

Many of the dropouts came from families in which the fathers engaged in unskilled work, usually farm labor or labor. Many of the families moved with the crops, many migrated as far north as Michigan to work in the fields. Many of the Mexican American youth traveled with their families to help work in the fields. Thus, these youth have had to quit school in order to follow the crops. Many of the youth and their families returned to the Valley sometime during the year and the youth tried to get in some schooling, but it was usually not enough to keep up with their in-school age peers.

Perhaps the school could accomodate the students by having classes to fit the schedule fo the migrant workers. In some of the northern states where there is a heavy inflow of migrant workers, the public schools have worked out a system whereby classes are held for the children from 4 P.M. to 7 P.M., thus allowing the children to work in the fields most of the day. Only the basic courses of reading, writing and arithmetic are taught, but at least the children are encouraged to get a basic education that would allow them to graduate from high school. For most jobs today require a high school diploma as an entrance ticket. The public schools in the southern states need to adjust their schooling system to meet more of the needs of these migrant children, and these special evening classes

might be one way.

Over half of the dropouts stated that they left school to make money. These dropouts came from very poor families and it is usually up to the older children to help make a living for their families. Most of the fathers were engaged in unskilled work, and it took all the people working in the family to get even a minimum amount of money into the household. These dropouts were either leaving school to find jobs in their own hometowns, or they were traveling with their parents to make money in the fields. None of the schools studied had any type of Distributive Education program, in which the students go to school half a day and then work half a day for pay. Thus, if more of the Mexican American youth were given a chance to take the D. E. type school program, they could complete their high school education, earn money for the family, and learn a skill at the same time. Also, the city merchants need to be encouraged to hire these youth for part-time jobs, both during school and during the summer months.

Almost one-fifth of the dropouts desired and expected additional training beyond high school. Also, about one-fifth of the Mexican American students desired and expected additional training beyond high school. Thus these Mexican American youth were strongly expressing a need for more technical schools that they might attend after high school. Many of the technical schools, such as Texas State Technilogical Institute in Waco, Amarillo, Sweetwater, and Harlingen are located in the more urbanized areas, thus making it

more difficult for the rural youth to gain access to such facilities. If more of these technical schools were located centrally among rural regions, then the rural youth would have an opportunity to gain post high school training. Thus they could improve their status in society as well as help make contributions to society.

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APPENDIX A

CHARACTERISTICS OF TEXAS POPULATION

Table 33. Selected Indicators of Socio-Economic Conditions in the South Texas Study Counties Compared with Texas and the United States

Place	Total Population (Thousands)	Mexican Americans (Percent)	Low-Income Familes[A] (Percent)	Median Family Income	Median School Yrs. Comp.[B]	Unskilled Lab. For.[C] (Percent)	Agr. Lab. For.[D] (Percent)
Dimmit	10	67	60	$2,480	5	62	38
Maverick	15	78	58	2,523	6	48	19
Starr	17	89	71	1,700	5	50	41
Zapata	4	75	66	1,766	5	55	39
Texas	9,580	15	29	4,884	10	37	8
United States	179,323	2	21	5,657	11	38	6

Source: U.S. Bureau of the Census, U.S. Census of Population: 1960, Volume 1, Characteristics of the Population, Part 1, United States Summary, Washington, D.C.: U.S. Government Printing Office, 1964, Tables 42, 76, 87, and 95; and Part 45, Texas, Washington, D.C.: U.S. Government Printing Office, 1963, Tables 14, 28, 47, 57, 66, 84, 86, and 87.

[A] Annual family income below $3,000.
[B] Persons 25 years old and over.
[C] Males and females classified as operative and kindred, private household workers, service workers, farm laborers and farm foremen, and other laborers.
[D] Males and females classified as farmers, farm managers, farm laborers, and farm foremen.

1208

APPENDIX B

EXCERPTS FROM RESEARCH INSTRUMENT USED IN THE SOUTH TEXAS STUDY OF MEXICAN AMERICAN SCHOOL DROPOUTS AND THEIR IN-SCHOOL AGE PEERS

2. Sex (Circle one number): 1 Male 2 Female

***

6. What is your race? (Circle one number):

1 White 2 Negro 3 Oriental 4 Indian 5 Other

***

9. If you were completely free to choose any job, what would you desire most as a lifetime job? (In answering this question give an exact job. For example, do not say "work on the railroad" but tell us what railroad job you would like to have.) Write your answer in the box below.

ANSWER: [ ]

***

10. (A) Sometimes we are not always able to do what we want most. What kind of job do you really expect to have most of your life? (Write your answer in the box below. Please give an exact job.)

ANSWER: [ ]

(B) How certain are you that this is the job you will have most of your life? (Circle one number):

I am:	1	2	3	4	5
	Very Certain	Certain	Not Very Certain	Uncertain	Very Uncertain

***

13. If you could have as much schooling as you desired, which of the

following would you do? (Circle only one number):

1. Quit school right now. (Never go to school again -- for dropouts)
2. Complete high school.
3. Complete a business, commercial, electronics, or some other technical program after finishing high school.
4. Graduate from a junior college (2 years).
5. Graduate from a college or university.
6. Complete additional studies after graduating from a college or university.

***

14. (A) What do you <u>really</u> expect to do about your education? (Circle only one number):

1. Quit school right now. (Never go to school again -- for dropouts)
2. Complete high school.
3. Complete a business, commercial, electronics, or some other technical program after finishing high school.
4. Graduate from a junior college (2 years).
5. Graduate from a college or university.
6. Complete additional studies after graduating from a college or university.

(B) How certain are you that you will really achieve the education <u>you expect</u>?

I am:	1	2	3	4	5
	Very Certain	Certain	Not Very Certain	Uncertain	Very Uncertain

***

27. Listed below are a number of things that most young people look forward to. Rank them in order of their importance to you. For the one you think is most important put a number 1 in front of it; for the next most important one put a number 2; and so on until you have a different number (from 1 to 7) for each one. <u>Read over the entire list before answering the question</u>.

_____ To have lots of free time to do what I want.

_____ To get all the education I want most.

_____ To earn as much money as I can.

_____ To get the job I want most.

_____ To live in the kind of place I like best.

_____ To have the kind of house, car, furniture, and other things like this I want.

_____ To get married and raise a family.

CHECK YOUR ANSWERS. You should have used each number from 1 to 7 only one time and you should have a number in each blank space.

***

28. Are you of Spanish American ancestry? (Circle one number.)

1 Yes 2 No

APPENDIX C

SUPPLEMENTARY TABLES

Table 34. Location and Number of Respondents Used in South Texas Study

Location	Dropout		In-School	
	No.	%	No.	%
Maverick County	26	35	204	34
Eagle Pass	22	30	204	34
Quemado	3	4	0	0
El Indio	1	1	0	0
Dimmit County	13	18	73	12
Carrizo Springs	5	7	51	8
Big Wells	1	1	0	0
Asherton	7	10	22	4
Zapata County	11	15	54	9
Zapata	4	5	54	9
San Ygnacio	7	10	0	0
Starr County	24	32	265	44
Rio Grande City	13	18	162	27
Salineno	1	1	0	0
Roma	3	4	73	12
San Isidro	4	5	30	5
Delmita	3	4	0	0
TOTALS	74	100%	596	100%

Table 35. Marital Status of Parents of Mexican American Respondents

Marital Status	Dropout		In-School	
	No.	%	No.	%
Both alive, living together	55	74	494	83
Both alive, separated or divorced	9	12	34	6
One or both parents not living	10	14	66	11
No information	0	0	2	0
TOTALS	74	100%	596	100%

Table 36. Identity of Major Money Earner in Mexican American Respondents' Households

Identity	Dropout		In-School	
	No.	%	No.	%
Father	44	59	451	76
Mother	6	8	47	8
Brother or sister	10	14	44	7
Other	14	19	52	9
No Information	0	0	2	0
TOTALS	74	100%	596	100%

Table 37. Occupation of Major Money Earner in Mexican American Respondents' Households

Occupation	Dropout		In-School	
	No.	%	No.	%
Professional & managerial (other than farm)	6	8	101	17
Farm or ranch owner	5	7	33	6
Clerical & sales	5	7	56	9
Skilled blue collar	10	13	94	16
Operatives	14	19	66	11
Unskilled labor	24	32	168	28
Unemployed, housewife, don't know	8	11	31	5
No information	2	3	47	8
TOTALS	74	100%	596	100%

Table 38. Educational Attainment of Parents of Mexican American Respondents

Educational Level	Dropout				In-School			
	Father		Mother		Father		Mother	
	No.	%	No.	%	No.	%	No.	%
Did not go to school	8	11	13	18	79	13	46	8
Less than high school	45	61	41	55	265	45	325	55
High school graduate	0	0	3	4	50	9	61	10
Vocational school after high school graduation	0	0	0	0	12	2	18	3
Some college	0	0	0	0	14	2	13	2
College graduate	0	0	0	0	26	4	17	3
Don't know	18	24	14	19	139	23	102	17
No information	3	4	3	4	11	2	14	2
TOTALS	74	100%	74	100%	596	100%	596	100%

Table 39. Age of Mexican American Dropouts at Time of Interview

Age	Male		Female	
	No.	%	No.	%
Age 13 or less	0	0	0	0
Age 14	1	3	0	0
Age 15	3	8	2	6
Age 16	6	15	2	6
Age 17	12	31	7	20
Age 18	8	20	11	31
Age 19	8	20	8	23
Age 20 or more	1	3	5	14
TOTALS	39	100%	35	100%

Table 40. Age at which Mexican American Dropouts Quit School

Age	Male		Female	
	No.	%	No.	%
13 years or less	2	5	1	3
14 years	7	18	6	17
15 years	6	15	2	6
16 years	11	28	7	20
17 years	10	26	12	34
18 years	3	8	7	20
TOTALS	39	100%	35	100%

Table 41. Highest School Grade Completed by Mexican American Dropouts

Grade	Male		Female	
	No.	%	No.	%
Sixth Grade or less	10	25	3	9
Seventh Grade	4	10	7	20
Eighth Grade	9	23	6	17
Ninth Grade	15	39	10	28
Tenth Grade	1	3	9	26
TOTALS	39	100 %	35	100 %

Table 42. Technical Training Programs Experienced by Mexican American Dropouts Since Leaving School

Type	Male		Female	
	No.	%	No.	%
None	28	72	26	74
With Job Corps	1	3	2	6
With Neighborhood Youth Corps	3	7	7	20
With other organizations or bussinesses	6	15	0	0
No information	1	3	0	0
TOTALS	39	100%	35	100%

Table 43. Type of Job Training Experienced by Mexican American Dropouts Since Leaving School

Type	Male		Female	
	No.	%	No.	%
No technical training	28	72	26	74
Laborer	4	10	9	26
Skilled trade, craft, or work	5	13	0	0
Machine operator	1	3	0	0
No information	1	2	0	0
TOTALS	39	100 %	35	100%

Table 44. Language Spoken by Mexican American Dropouts with Parents and Friends

Language	Language Spoken With: Parents				Friends in Neighborhood				Friends at Work			
	Male		Female		Male		Female		Male		Female	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
English	1	3	0	0	1	3	7	21	6	15	9	27
Spanish	30	77	24	71	27	69	12	35	17	44	7	20
About the same amount of both	8	20	10	29	11	28	15	44	14	36	17	50
No information	0	0	0	0	0	0	0	0	2	5	1	3
TOTALS	39	100%	34	100%	39	100%	34	100%	39	100%	34	100%

Table 45. Mexican American Dropouts' Ratings of Importance of Reasons for Leaving School

Reasons	Percentage Indicating Some or Much Importance			
	Male		Female	
	No.	%	No.	%
School Related:				
Couldn't get along with teachers	12	31	9	26
Had poor grades	15	39	23	68
Wasn't learning anything I could use	17	44	9	26
The principal or school counselor told me to leave	3	7	1	3
Other students didn't like me	6	15	5	15
Social Pressure Outside of School:				
My father wanted me to quit	4	11	3	9
My mother wanted me to quit	1	3	1	3
My friends wanted me to quit	2	5	1	3
Financial/Home:				
To make some money	20	51	11	31
Didn't have good enough clothes or money to do what other students did	12	30	7	21
To get married	4	11	5	14
Other reasons	11	28	13	37

Table 46. Frequency Distribution of Educational Aspirations of Mexican American Youth by School Status and Sex

Educational Level	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
Never go to school or quit high school	11	1	4	0	15	1
High school graduate	16	54	18	65	34	119
High school graduate plus additional training	5	81	8	86	13	167
College graduate	7	152	5	154	12	306
No information	0	2	0	1	0	3
TOTALS	39	290	35	306	74	596

Table 47. Frequency Distribution of Intensity of Educational Aspirations of Mexican American Youth by School Status and Sex

Intensity	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
Strong	15	245	17	273	32	518
Intermediate	12	28	12	25	24	53
Weak	10	15	6	8	16	23
No information	2	2	0	0	2	2
TOTALS	39	290	35	306	74	596

Table 48. Frequency Distribution of Educational Expectations of Mexican American Youth by School Status and Sex

Educational Level	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
Never go to school or quit high school	16	1	6	2	22	3
High school graduate	13	89	17	96	30	185
High school graduate plus additional training	9	86	5	95	14	181
College graduate	0	113	7	112	7	225
No information	1	1	0	1	1	2
TOTALS	39	290	35	306	74	596

Table 49. Frequency Distribution of Certainty of Educational Expectations of Mexican American Youth by School Status and Sex

Certainty	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
Certain	18	143	7	153	25	296
Not very certain	15	131	24	136	39	267
Uncertain	5	15	5	15	9	30
No information	1	1	0	2	1	3
TOTALS	39	290	35	306	74	596

Table 50. Frequency Distribution of Anticipatory Deflection from Educational Aspirations of Mexican American Youth by School Status and Sex

Nature of Deflection	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
None	23	171	21	191	44	362
Positive	5	27	6	15	11	42
Negative	11	90	8	98	19	188
No information	0	2	0	2	0	4
TOTALS	39	290	35	306	74	596

Table 51. Frequency Distribution of Occupational Aspirations of Mexican American Youth by School Status and Sex

Occupational Level	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
High professional	0	36	0	9	0	45
Low professional	2	99	9	155	11	254
Glamour	0	17	1	17	1	34
Managerial	4	21	0	3	4	24
Clerical & sales	2	24	15	88	17	112
Skilled	26	57	6	20	32	77
Operatives	1	11	0	2	1	13
Unskilled	4	14	4	1	8	15
Housewife	0	0	0	5	0	5
No information	0	11	0	6	0	17
TOTALS	39	290	35	306	74	596

Table 52. Frequency Distribution of Occupational Aspirations, Using High, Intermediate, and Low Level Categories of Mexican American Youth by School Status and Sex

Occupational Level	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
High	2	152	10	181	12	333
Intermediate	32	102	21	111	53	213
Low	5	25	4	8	9	33
No information	0	11	0	6	0	17
TOTALS	39	290	35	306	74	596

Table 53. Frequency Distribution of Intensity of Occupational Aspirations of Mexican American Youth by School Status and Sex

Intensity	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
Strong	23	198	20	220	43	418
Intermediate	13	84	13	73	26	157
Weak	2	6	2	12	4	18
No information	1	2	0	1	1	3
TOTALS	39	290	35	306	74	596

Table 54. Frequency Distribution of Occupational Expectations of Mexican American Youth by School Status and Sex

Occupational Level	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
High professional	0	18	0	5	0	23
Low professional	0	87	4	94	4	181
Glamour	0	7	1	8	1	15
Managerial	3	33	0	3	3	36
Clerical & sales	2	30	8	125	10	155
Skilled	21	68	1	25	22	93
Operatives	4	16	0	3	4	19
Unskilled	9	20	6	5	15	25
Housewife	0	0	15	32	15	32
No information	0	11	0	6	0	17
TOTALS	39	290	35	306	74	596

Table 55. Frequency Distribution of Occupational Expectations, Using High, Intermediate, and Low Level Categories of Mexican American Youth by School Status and Sex

Occupational Level	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
High	0	112	5	107	5	219
Intermediate	26	131	9	153	35	284
Low	13	36	21	40	34	76
No information	0	11	0	6	0	17
TOTALS	39	290	35	306	74	596

Table 56. Frequency Distribution of Certainty of Occupational Expectations of Mexican American Youth by School Status and Sex

Certainty	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
Certain	17	101	22	96	39	197
Not very certain	12	149	11	173	23	322
Uncertain	9	29	1	28	10	57
No information	1	11	1	9	2	20
TOTALS	39	290	35	306	74	596

Table 57. Frequency Distribution of Anticipatory Deflection from Occupational Aspirations of Mexican American Youth by School Status and Sex

Nature of Deflection	Male		Female		Total	
	Dropout	In-School	Dropout	In-School	Dropout	In-School
None	26	173	13	186	39	359
Positive	4	25	1	18	5	43
Negative	9	81	21	96	30	177
No information	0	11	0	6	0	17
TOTALS	39	290	35	306	74	596

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VT 018 870

VT 018 870
EASLEY, ROBERT D.
A STUDY TO DETERMINE THE EFFECTIVENESS OF THE LABORATORY TECHNICIAN PROGRAM IN PLACING STUDENTS IN THIS OR ANY RELATED PARAPROFESSIONAL HEALTH FIELD.

PITTSBURGH BOARD OF PUBLIC EDUCATION, PA.
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DESCRIPTORS - *PROGRAM EVALUATION; *HEALTH OCCUPATIONS EDUCATION; *LABORATORY TECHNOLOGY; *SUBPROFESSIONALS; *EDUCATIONAL PROGRAMS; MEDICAL ASSISTANTS; HEALTH PERSONNEL
IDENTIFIERS - PITTSBURGH SCHOOL DISTRICT

ABSTRACT - THIS STUDY WAS INITIATED TO DETERMINE THE EFFECTIVENESS OF THE LABORATORY TECHNICIAN PROGRAM IN THE PITTSBURGH SCHOOL DISTRICT IN REGARD TO THE ACQUISITION OF MARKETABLE SKILLS BY STUDENTS. TO OBTAIN DATA, INTERVIEWS WERE CONDUCTED WITH PATHOLOGISTS, LABORATORY SECTION HEADS, LABORATORY ADMINISTRATORS, GUIDANCE COUNSELORS, AND A SECONDARY SCHOOL SUPERVISOR AND QUESTIONNAIRES DISTRIBUTED TO 102 JUNE 1968 AND 1970 GRADUATES OF THE PROGRAM. AN ANALYSIS OF THE FINDINGS INDICATED THAT: (1) A TOTAL OF 44 STUDENTS DID NOT RESPOND TO THE SURVEY AND THE REASONS FOR IT ARE UNKNOWN, (2) IN TERMS OF DIRECT EMPLOYMENT, THE PROGRAM WAS A FAILURE, ONLY SIX STUDENTS OUT OF THE 58 WHO REPLIED WERE ABLE TO FIND EMPLOYMENT IMMEDIATELY UPON GRADUATION WITHOUT FURTHER TRAINING, (3) APPROXIMATELY 28 STUDENTS SOUGHT HIGHER EDUCATION, (4) THE JOB MARKET IN THIS AREA HAS LITTLE OR NO POTENTIAL FOR GROWTH, AND (5) THE PERIOD OF TIME SPENT IN THE COURSE IS TOO LONG FOR THE END RESULTS OBTAINED. (SN)

A STUDY TO DETERMINE THE EFFECTIVENESS OF THE LABORATORY TECHNICIAN PROGRAM IN PLACING STUDENTS IN THIS OR ANY RELATED PARAPROFESSIONAL HEALTH FIELD

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by

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A Research Report Submitted to Commonwealth of Pennsylvania, Department of Education, in Fulfillment of a Type A Mini-Grant

Division of Occupational, Vocational, and Technical Education
Pittsburgh Board of Public Education
Pittsburgh, Pennsylvania

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September, 197[illegible]

The advice and encouragement of Mary Pochlmann cannot go unrecognized by this investigator. Many technical questions of organization and technique were answered by her and her enthusiasm to see the finished report was the motivation needed to finish what at times was a discouraging project.

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CHAPTER I

THE PROBLEM

Statement of the Problem

The curriculum for the Biological Scientific Helper program has been in effect since February, 1964. During this time, much money has been spent, many students have matriculated, and many teaching hours have elapsed. This report was initiated to evaluate these efforts in terms of program/market responsiveness.

Student enrollment in the program was scrutinized to determine if our counseling reinforcement is adequate. Is there a place for these particular students as they are prepared by the program? What are the needs and requirements of the industry at present and in the future? Also, the feasibility of continuing the program at its present level or planning for program expansion or reduction has been taken into consideration herein.

The core and purpose of an occupational, vocational, technical curriculum should be skill and service. Does the student emerge from the program in question with a specific skill which provides him the service of gainful employment? In respect to Biological Scientific Helper, the student is required to spend two periods a day for two years acquiring this particular skill. Four credit hours is equivalent to 23 percent of the total

requirements necessary for graduation from high school. The use of nearly one-fourth of a student's time does make that particular area of study a significant one. The use of so much of a student's time does make the question of worth (in terms of employment) a significant one.

Therefore, the purpose of this study is to evaluate such use of the student's time. If the goal of vocational education is acquiring a marketable skill, the realization of this goal can only be accomplished through employment in the industry.

It was the assumption of the investigator that the curriculum in question was producing a skilled product and that this product was encountering much difficulty gaining employment. Such an assumption proved to be only partially correct. That graduates of this program are encountering difficulty acquiring jobs is a reality which will be documented later. One factor related to this difficulty can be found in the realization that today's hospital laboratory requires a much more sophisticated and skilled technician than the curriculum in question produces.

Only two factors limited the scope and perhaps the validity of this report. Some difficulty was encountered in securing addresses of students, thus limiting the response to the student survey. Also, no previous research or investigation of a similar structure could be found.

CHAPTER II

REVIEW OF LITERATURE

No Previous Research

The Pittsburgh Schools are unique in that this particular curriculum, or a similar one, exists in few if any other secondary schools. It is for this reason that no previous research could be found.

1.14

CHAPTER III

RESEARCH TECHNIQUES

Construction of Questionnaire

The design of the questionnaire was to elicit objective yes or no responses. The questions asked concerned the student's success or failure in gaining employment or further education in the field of medical technology. This survey was printed on self-addressed and stamped 4" x 6" cards. The survey was sent with a cover letter identifying the investigator and explaining the purposes of the survey.

Recipients of the questionnaire were those students who had graduated from the program during the period June, 1968, through June, 1970. The response included the return of 48 completed surveys, 6 letters, and 3 telephone conversations.

Interviews

Recorded interviews were conducted with three pathologists, two laboratory section helds, two laboratory administrators, two guidance counselors, and a secondary school supervisor. Questions asked in each interview depended upon the subject being interviewed. The focus in most of the interviews was the availability of jobs and what are the qualifications needed to perform such jobs.

The interviews with school personnel were concerned with the ideas of dwindling enrollment, motivation, and interest of students in the curriculum.

All interviews, with one exception, were recorded and are available for use by anyone conducting further research into this problem.

CHAPTER IV

ANALYSIS OF DATA

Completed Course

The course in question covers a two-year period during which the students enrolled receive four credit hours toward graduation. Thirty-nine students successfully completed both years. Only two responses indicated less time was spent in the course.

Gained Employment

Eight students indicated that they had found employment in the field of medical technology or a related health field. The responses included two lab assistants, one dental assistant, one corpsman, one clerical worker, one surgical research technician, one medical lab technician, and one CLA. These results are not as encouraging as they appear. Two of the above positions were acquired only after additional post-graduate schooling.

The young lady who indicated she was working as a clerical worker in a private lab had attended college one and a half years before acquiring this position. The CLA had attended Allegheny Community College before being licensed. The success of these two students must be partly attributed to their advanced schooling.

Was Training Adequate?

Was your training in high school adequate preparation for your job? This question was asked of each student. There were ten positive responses to this question and four negative.

Those indicating that their training was adequate included a:

Telephone Installer
College--Business Administration
Dental Assistant
Nursing Student
Research Lab Technician Student
Inhalation Therapy Student
Medical Lab Technician Student
Corpsman
CLA Student
Surgical Research Technician
Public Health Lab Assistant

The negative responses provide two interesting and puzzling answers. They include a stock clerk and a college history major who felt the course did not prepare them for their current undertakings. One graduate now majoring in biology responded negatively, and a graduate now working as a lab assistant responded no to the question and commented, "Some methods of doing some of the lab work I found very outmoded..." when compared to the routines found in the modern hospital.

Further Education

Thirty-two of the students polled indicated that they were furthering their education. Eight indicated they were not, and eight people did not address themselves to the question and it is assumed they were not continuing their education either.

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Field of Study Related to a Health Career

Sixteen graduates pointed out that they were continuing their education in the field of medical laboratory technology or related areas. It must be indicated here that five of these students had also responded yes to the previous question of working in a related field. It must be assumed that they are working and attending school at the same time. A breakdown of the positive responses can be found in Table II. The no responses were all college students with majors unrelated to the health field. They included such fields as Accounting, Business Administration, Political Science, Studio Art, Journalism, and History.

TABLE I

RESULTS OF QUESTIONNAIRE TAKEN AMONG GRADUATES OF PROGRAM

Question		Fifth Avenue	Westinghouse	Carrick
Did you complete the course?	Yes	5	6	28
	No	0	0	2
Are you employed in the field of medical technology or any related health field?	Yes	0	1	7
	No	4	4	21
Did your training in high school adequately prepare you for this job?	Yes	2	2	7
	No	1	0	3
Are you currently enrolled in a program which leads to some type of degree?	Yes	4	4	24
	No	1	1	6
Is your field of study related to the medical technology field?	Yes	2	1	13
	No	2	3	14

TABLE II

LIST OF RELATED JOBS SECURED BY GRADUATES

Laboratory Assistant	2
Dental Assistant	1
Surgical Research Technician	1
Clerical Worker in Lab	1
Medical Laboratory Technician	2
Corpman in Army	1

TABLE III

TYPES OF POST-GRADUATE EDUCATION PURSUED IN A FIELD RELATED TO MEDICAL TECHNOLOGY

College -- Math and Science
College -- Biology (3)
Nursing Student (2)
College -- Medical Technology
CLA Program
Research Lab Technician -- Connelley
Inhalation Therapy
College Chemistry
ICU Technician -- Army
College -- Pre-Med
College -- Pest Control

Interviews

General Discussion

This aspect of the project was the most difficult. Availability of the proper subjects in the time available provided many difficulties. In all, 10 subjects were interviewed. Nine of these interviews were recorded and analyzed. Three pathologists, one administrative assistant, one hopsital coordinator, two section heads, two school counselors, and one school administrator were interviewed. The nature of the interview and the data gathered was dependent upon the position and background of the subject being interviewed.

The Pathologist

All three pathologists interviewed agreed that the need for the junior technician is dwindling. Two pathologists stated that a person just graduating wouldn't be qualified to work in a hospital lab except in two specialized areas. These areas were Microbiology and Histological Technique. It was the opinion of one pathologist that the private physician's office might be an area where students graduating from a laboratory course such as the one in question might fit in quite adequately as a combination secretary technician.

What qualities or aptitudes do you look for in a job applicant? The response to this included the usual traits of appearance, good habits, and ability to get along with others. Applicant should have high grades and a background in chemistry or biology. It was also stressed that this particular type of applicant--the high school graduate--should be very highly

interested and dedicated to this field. This job level can become very frustrating as advancement only comes with more education; than if applicant does not have sincere interest and dedication, he will meet only frustration and discontent.

What are needs of hospital in regards to needs of today and in the future? Automation, as would be expected, has had an effect upon the hospital lab. However, the effect is polar to that of most industries. The cost and efficiency of new equipment demands that the lab remain in operation seven days a week, 24 hours a day. This means that more personnel must be available at all times during the day. Even though the equipment is sophisticated, there will still be some need for lesser trained employees. As one doctor stated, "There is always a need for all categories because a technologist is paid too high to perform certain jobs." Automation did eliminate the jobs of some people, but the increased work hours covered this loss of personnel. In the advent of electronics, the lab has remained somewhat stable. More and more sophisticated methods will decrease the need for Junior Medical Technicians and create a demand for electronic technicians.

All three doctors indicated that the present job market is very tight, and people are hanging onto jobs. This can be attributed to two reasons. Recently, many labs created administrative positions of section heads and assistant section heads. These require a minimum of three to five years' experience. To qualify for these better-paying jobs, people are holding onto their present jobs. Also, the only turnover is in the junior level where the supply is greater than the demand.

The only conditions under which the hospital could be used as a cooperative experience were:

1. Must be a recognized (certified) program.
2. Students must be compensated for time.
3. Student must become a part of entire daily routine.
4. Students must be made aware that they are responsible for certain duties.

The general opinion of all three doctors was that the needs for junior technicians was dwindling except in the departments of microbiology and histological technique.

Microbiology

The section head of this department did agree that the junior technician had a definite place in her lab. They could adequately make media, innoculate certain types of cultures, do simple strains, and collect blood cultures. She did feel that it took a junior technician about a full year to become proficient in all aspects of general bateriology. She preferred that an applicant have had some science; and if the student is really good in basics and fundamentals of technique, they can adapt to most situations.

Chemistry

The other section head interviewed was a Ph. D. in Chemistry. It was her feeling that these students could only find employment in the field if they had a placement period where they could demonstrate their ability. Like the pathologists, she too agreed that such a program would only work on a full-time basis. The qualifications she expected of an applicant for the position of junior technician were pratical experience, respect for supervision, willingness to learn, and dependability.

Coordinator

This subject felt that a junior technician job applicant must be able to get along with people because of patient contact and that the applicant must have a whole lot of patience. She too agreed that manpower needs of the hospital will remain stable in spite of automation because labs now will do more tests. She had used cooperative students from high schools and found them helpful in many ways. These students could do many jobs which were too expensive to assign to a technologist.

Counselors

Interviews were conducted with two counselors in different schools. As with the doctors, their opinions were concurrent. Both described it as a good course for a foundation in biology, pre-medicine, nursing, or most all of the health careers. One subject felt that the name of the course was misleading because we did not mean for students to be a technician upon graduation.

The co-requisite of the course requiring anyone enrolled in the course to take Biology II and Chemistry was too much use of a student's time. This condition found the student enrolled in sciences four periods a day for two years. The other counselor felt, "If you are going to take up the time of the student's school life, then there should be a ready market and students should be reasonably sure of an income for the rest of his life."

Both counselors agreed that enrollment in the course was declining. One courselor offered the explanation that students were now reaching out and asking why they should take a course, not blindly accepting the counselor's

advice. The same counselor felt that students were aware of the lack of success of the efforts of past graduates in finding jobs, and this might afford some plausible reason for declining enrollment.

School Administrator

The administrator in question was a past supervisor of all health career courses taught at the secondary level. It was the opinion of this administrator that the goal of vocational education at the secondary level was to stimulate. The student in high school is not ready in terms of maturity to select a vocation and become proficient in it. This administrator talked about three areas where wrong decisions had been made. First was recruitment. In many instances, the students selected for health programs had no background courses, and thus, the course in question became a dumping ground. Secondly, many of the courses were not glamorous enough to satisfy the hopes and ambitions of today's student. Lastly, the selection of teachers was wrong. As a specific example, the Practical Nurse program was cited. The requisites of the Board of Education required of a teacher a Masters Degree in Nursing. The ability of the typical student in this course to communicate with such a teacher was often times impossible.

CHAPTER V

SUMMARY AND CONCLUSIONS

Vocational education is a multi-purpose educational endeavor. It's goals may be defined in terms of employment or employment readiness. They may also be defined in terms of acquiring a marketable skill or in terms of preparing a student for further training in a specific skilled area. Using these goals as a basis for judgment, this study leads one to conclusions which are positive and negative.

In terms of direct employment, the program must be considered a failure. Only 6 students out of 58 who replied were able to find employment immediately upon graduation with no further training. Two other students went on for further schooling and then acquired jobs. The result is that only 10.3 percent of those who replied were able to find jobs upon graduation. One must also remember that 28 other students went on to school and they were thus removed from the job market. These 28 plus the 8 who were working leave us with 22 students who were not serviced by this program in terms of employment. It is also the feeling of the investigator that we must be cognizant of the remaining 44 questionnaires which were not returned. Of these, 9 were returned as address unknown, leaving 35 which must be assumed to have been received by the students in question. Why were they

not returned? Could it be it is because these students did not have jobs or felt the program's merit did not even warrant an answer? Certainly this is an interesting possibility. One must agree that a 10.3 percent employment rate is not good.

Enrollment in all three programs in the city schools has gotten progressively smaller. This can possibly be related to the failure of previous graduates in their attempts to secure employment. Certainly a student in high school who is seeking a vocation which will get him a job is going to be discouraged by this lack of success on the part of his peers.

The period of time spent in the course is too long. To use one-fourth of a student's school day for two years in training for a job market which is diminishing and in which previous graduates have had little achievement in terms of employment is certainly not being of service to the student.

The interviews with the professionals in the medical field must also be taken into consideration at this point. The job category of Junior Technician--graduates of the program under investigation fall into this category --has little or no growth potential. Automation has not as yet eliminated this position, but the market for these jobs definitely will not grow. If anything, the sophistication of the job applicant will become more demanding as the machines and techniques in this field are rapidly becoming more sophisticated and complex.

The position of Junior Technician is relatively stagnant in terms of advancement. Promotion to Senior Technician only comes as a result of further schooling. Even lateral movement is hindered by the fact that Junior

Technicians are only needed in the areas of Microbiology and histological technique. Certainly such circumstances are not very appealing to the adolescent seeking a vocation as a result of taking Biological Science Helper in high school.

It can also be concluded from the data gathered during the interviews that the industry is aware of the youthfulness of the high school graduate and a reluctance to hire students immediately upon graduation was expressed in some interviews.

Recommendations

The investigator would like to recommend two courses of action. The present program must definitely be restructured to cover a time period of one year with the curriculum stressing the areas of Microbiology and Histological Technique. The only prerequisite demanded of the student should be completion of a course in General Biology. The main objective of the curriculum must be the stimulation of the interest of the student toward a career in the medical technology field. The student's time in high school is much too valuable to be spent centered on a goal which, in most instances, has been found to be unrealistic.

It is also the recommendation of this investigator that the idea of instituting a one-year survey course of all health careers be pursued. The curriculum would include modules on Medicine, Nursing, Radiation Technology, Lab Technology, Pharmacy, Physical Therapy, Surgical Technology, Inhalation Therapy, and the Dental professions. If such a course were instituted, then the goal of service to the vocational student could be achieved.

With the freedom to enroll in only that module of the curriculum in which there was curiosity or interest, the student could satisfy that curiosity and be stimulated to seek achievement of that goal in some form of further education. The data gathered in this report document our objective of stimulation. At the secondary level, it is impossible for reasons stated earlier to produce a product acceptable by the industry. Our only realistic goal then becomes stimulation of the student's curiosity.

APPENDIX

PITTSBURGH PUBLIC SCHOOLS
LOUIS J. KISHKUNAS, SUPERINTENDENT

DIVISION OF OCCUPATIONAL, VOCATIONAL
AND TECHNICAL EDUCATION
635 RIDGE AVENUE
PITTSBURGH, PENNSYLVANIA 15212

JERRY C. OLSON
ASSISTANT SUPERINTENDENT

July 7, 1971

I am a teacher at Fifth Avenue High School and I need your help. From school records, we have found that you took a Research Laboratory Assistant course in high school I would like your assistance in determining if this course is a valuable asset to our curriculum.

Enclosed you will find a self-addressed stamped card. Would you please answer the questions and return it to me by July 15. Hopefully you may have other comments to make, and these are more than welcome. Feel free to contact me by mail or by telephone (243-8524).

I want to thank you in advance for your cooperation.

Gratefully yours,

Robert D. Easley

Robert D. Easley

RDE/jma

Enclosure

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VT 018 872
THOMPSON, JOHN F.
PILOT PROGRAMS IN VOCATIONAL AGRICULTURE: A PROFILE OF STUDENTS 1971-1972.

WISCONSIN UNIV., MADISON.
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DESCRIPTORS - *PILOT PROJECTS; *VOCATIONAL EDUCATION; *VOCATIONAL AGRICULTURE; *CAREER OPPORTUNITIES; *VOCATIONAL DEVELOPMENT; OCCUPATIONAL CHOICE; EDUCATIONAL PROGRAMS; CAREER CHANGE
IDENTIFIERS - WISCONSIN; *VOCATIONAL MATURITY

ABSTRACT - SUMMARIZED ARE THE EVALUATIVE ASSESSMENTS OF NINE PILOT PROJECTS CONDUCTED DURING THE 1971-72 YEAR. INVOLVED WERE 375 ELEVENTH AND TWELTH GRADE STUDENTS FROM FARM AND NON-FARM HOME ENVIRONMENTS. AN ANALYSIS OF PROGRAM FINDINGS REVEALED THAT: (1) THERE WERE MORE GIRL PARTICIPANTS THAN BOY PARTICIPANTS, (2) NON-FARM STUDENTS COMPRISED TWO-THIRDS OF THE ENROLLMENT, (3) A GREAT MAJORITY OF THE STUDENTS HAVE JUST RECENTLY BECOME INTERESTED IN VOCATIONAL AGRICULTURE, (4) FARM STUDENTS CONSISTENTLY MAKE HIGHER GRADES IN PILOT PROGRAM COURSES THAN DO NON-FARM STUDENTS, (5) STUDENTS' GRADES ARE HIGHLY CONSISTENT IN ACADEMIC AND VOCATIONAL COURSES, (6) THERE WAS A DECLINE IN THE PERCENT OF STUDENTS REPORTING PRIOR AGRICULTURAL OCCUPATIONAL EXPERIENCE THAN IN PROGRAM ENROLLEES IN PREVIOUS YEARS, (7) THERE HAS BEEN A DECLINE IN STUDENT EXTRA-CURRICULAR INVOLVEMENT, (8) STUDENT CAREER ASPIRATIONS WERE HIGHER THAN THEIR EXPECTATIONS, AND (9) THERE HAS BEEN A DECLINE IN THE VOCATIONAL MATURITY SCORE OF STUDENT PARTICIPANTS. (SN)

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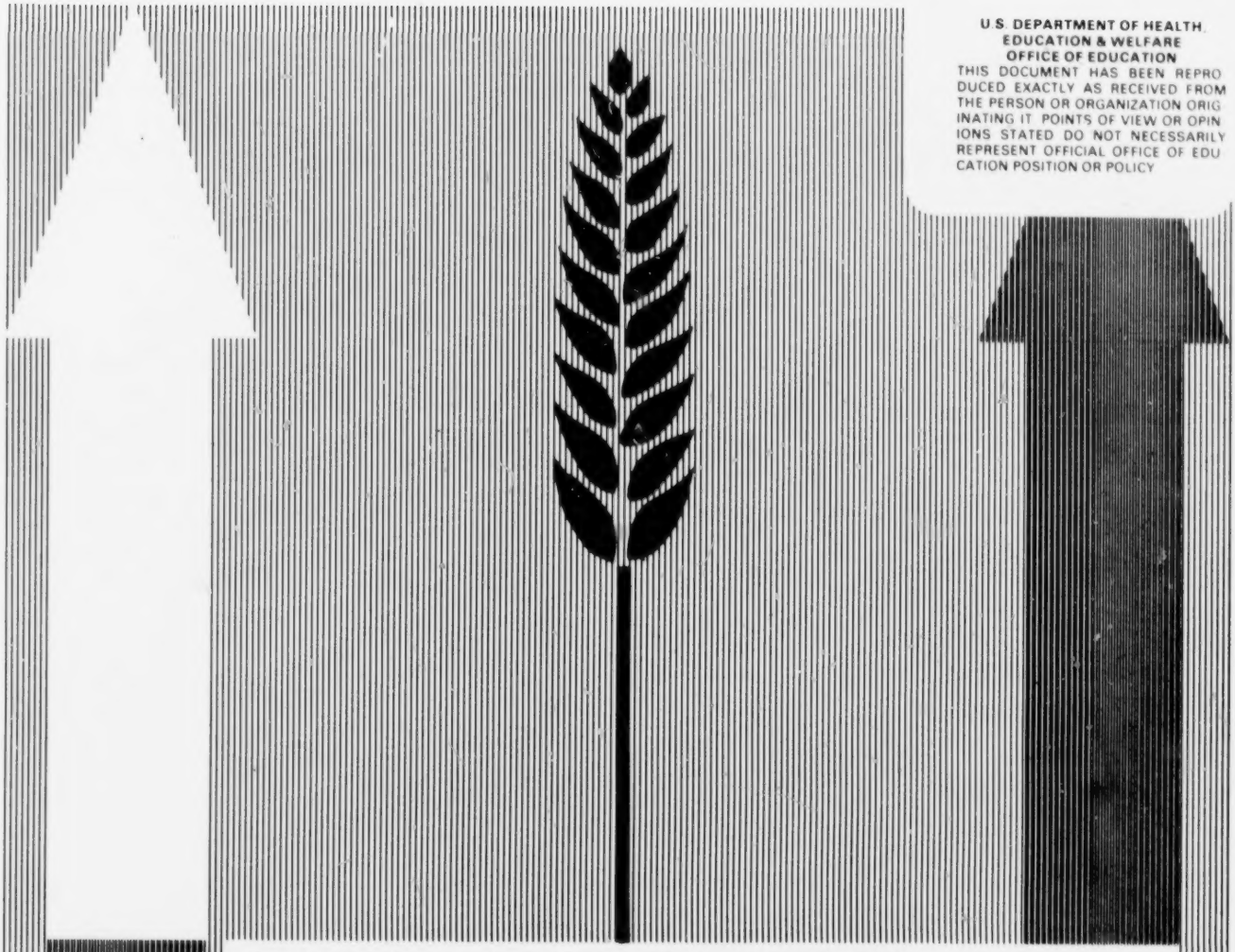

PILOT PROGRAMS IN VOCATIONAL AGRICULTURE

By John F. Thompson

REPORT NO. 7

A PROFILE OF STUDENTS 1971-1972

VT018872

Department of Agricultural
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* * * * *

This research is supported in part by grants from the *Wisconsin Department* of Public Instruction and the *Research Committee, University* of Wisconsin Graduate School. Appreciation is also extended to Mr. Eston Glover Jr. who gathered the data and to Mr. Ron Jimmerson who drafted sections of this report

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FACTUAL SUMMARY

1. Nine pilot programs enrolled 375 eleventh and twelfth grade students in 1971-72. Two schools (Middleton and Green Bay East) enrolled 63 percent the students.

   The average enrollment has increased from 22 students per program in 1968-69 to the current 42 students.

   Nearly all programs continue to gain increased enrollment their second and third year of operation.

2. Two out of three junior-seniors are seniors.

3. Girls continue to be attracted to the program. Their enrollment has increased from four percent in the first year to 17 percent for the current year.

4. Non-farm students comprise two-thirds of the students enrolled in pilot programs. This figure is down slightly from last year when they made up 72 percent of the total enrollees.

5. The majority of the students have only recently become interested in vocational agriculture. Sixty-seven percent of the students enrolled are taking vocational agriculture for the first time. This is the first year that the majority of the enrollees are new to agriculture courses. Again, this is the influence of the unusually large enrollment in the new program at Middleton.

6. Farm students make higher school grades in the pilot program courses than do non-farm students.

7. The typical student reports average grades in academic courses and average grades in vocational agriculture. The above average student in vocational agriculture is more likely to be average than above average in academic courses.

8. There has been a steady decline in the percent of students reporting prior occupational experience in agriculture over the four year period.

9. A higher percent of students with extensive experience in agriculture are farm residents. This is a sharp shift from last year when non-farm students reported a higher percent but about the same as the first two years of the pilot programs.

10. Students reported less extra curricular activity than in past years. One student in four participated in both school and community organizations compared to one in three last year. Students confining their participation to school organizations comprised 43 percent of the total.

1968

11. Farm youth participate in extra-curricular activities more intensively than do non-farm students.

12. Seventy-five percent of the students enrolled in the pilot programs for exploratory reasons. This is an increase over previous years when about 60 percent enrolled for these reasons.

13. Twice as many students with prior experience in agriculture enrolled for definite career reasons as did students with no prior experience. There has been a steady decline, however, in the number of students with prior agriculture experience enrolling in the pilot programs for career preparation rather than career exploration.

14. Farm students have a slightly higher percent enrolling for career preparation than do non-farm students.

15. Once enrolled, 79 percent of the students express exploratory reasons as their personal objectives for the pilot program. This is a higher percent than was reported in any of the prior three years. The percentage of farm students choosing the pilot program for exploratory reasons has increased steadily over the four year period. The number of non-farm students enrolling for definite career objectives has dropped sharply after a steady increase during the first three years of the program.

16. The majority of both students with occupational experience and those without occupational experience entered the pilot program for exploratory objectives. The students with prior occupational experience were more likely to enroll for definite reasons than those with no prior experience.

17. Students at the age and grade level studied were aware of the need to decide on an occupation. Their desire to enroll in the pilot program to explore an occupational area was the result of that awareness, and thus the pilot programs are serving student needs.

18. A smaller number of students have indicated a preference for agricultural jobs than in past programs. (only 37 percent in 1971-72 compared to about 50 percent in past years.)

19. Residence had a noticeable effect on career plans. Farm students tend to select production agriculture or non-agriculture jobs. Non-farm students prefer non-agricultural jobs, conservation, agriculture resources, and forestry.

20. One or more years of agriculture study seem to influence students to choose agriculture careers. More than one year of agriculture study does not greatly increase the likelihood that a student will choose an agricultural career. This is inconsistent with past programs which showed that as the number of years in agriculture increased, the tendency for a student to plan a career in agriculture also increased.

21. When asked to consider a list of three occupations that they would consider entering, only 19 percent of the students identified a consistent set. Consistency was defined in terms of jobs requiring the same general educational level, the same type of work, or the same pay level.

22. Student career aspirations were higher than their expectations. Thirty-six percent of the students aspired to a career in agriculture and 31 percent expect to attain the same level of socio-economic job that they aspire to. The aspiration and expectation level of farm students is closer than is the non-farm group.

23. Forty-five percent of the students in the pilot programs had limited their plans to a related cluster of occupations.

24. Over the four year period there has been a general decline in the vocational maturity score of students attracted to the pilot programs. Farm students showed higher vocational maturity scores than did their non-farm counterparts. The students that are attracted to these special junior-senior year courses represent a wide spectrum of the phases and stages of the vocational developmental process.

STUDENT CHARACTERISTICS

In this section such student characteristics as grade, sex, residence, prior experience in vocational agriculture, scholastic performance and occupational experience are discussed. These characteristics comprise a profile of the pilot program enrollee. Since this is the fourth year the pilot programs have been in operation it is now possible to see some interesting trends that have developed since the program began in 1968-69.

Grade

Table 1 shows that there were 375 eleventh and twelfth grade students enrolled in nine pilot programs in 1971-72. Four schools--Bloomer, Green Bay East, Independence, and Southern Door were in their third year of operation. One school Antigo, was in its second year of operation and four schools--Franklin, Seymour, Waupun, and Middleton were in their first year of operation with a pilot program.

Sixty-three percent of the students involved in this current report were enrolled in two schools--Middleton and Green Bay East. These data were carefully analyzed and size of school continues not to influence the trends reported in this study. Other variables such as residence and occupational experience explains the differences among students.

For the current program 69 percent of the students were seniors and 31 percent juniors as indicated in Table 1. The trend for the four years was for the seniors to make up for the two-thirds of the junior-senior total. Student enrollment in the second and third year programs has increased steadily in most cases.

Table 2 indicates the total enrollment for the current program was up from past years even though the number of schools involved was three less than in the previous two years. The average enrollment as the programs began in 1968 was 22. This had increased slowly in the intervening years but increased sharply in 1971-72 from 26 to 42. This last increase is due largely to the high enrollment attracted by the first year program at Middleton.

Sex

Table 3 reveals that there has been a steady increase in female enrollees over the four year period since the pilot programs began. Sixty-five girls were members in the pilot program this year making up 17 percent of the total enrollment. Girls comprised only four percent of the enrollment during the first year of the program.

TABLE 1: CURRENT PILOT PROGRAM ENROLLMENT BY SCHOOL, GRADE AND YEAR

	SCHOOL									TOTAL	
Grade/Year	Bloomer	Green Bay East	Independence	Southern Door	Antigo	Franklin	Seymour	Waupun	Middleton	Number	Percent
11	6	40	13	8	0	0	0	2	46	115	31
12	8	50	0	25	30	16	16	13	102	260	69
Total 1971-72	14	90	13	33	30	16	16	15	148	375	100
* * *

TABLE 2: SUMMARY OF PILOT PROGRAM ENROLLMENT BY YEAR AND GRADE

Year	No. of Schools Participating	Grade 11th	Grade 12th	Total	Average Enrollment
1968-69	9	67	107	198*	22.0
1969-70	12	87	182	269	22.4
1970-71	12	114	198	312	26.0
1971-72	9	115	260	375	41.7

* 24 tenth graders were included in this total

TABLE 3: PERCENTAGE OF PILOT PROGRAM PARTICIPANTS ACCORDING TO SEX AND YEAR

Sex	1971-72 Number	1971-72 Percent	Percentage 1970-71	Percentage 1969-70	Percentage 1968-69
Male	310	83	89	93	96
Female	65	17	11	7	4
Totals	375	100	100	100	100

Residence

Participation in pilot programs by non-farm students remained high for the current year. Those students made up 68 percent of the total as indicated in Table 4. The peak enrollment of non-farm students was in 1970-71 when their enrollment reached 72 percent. Thus, non-farm students have tended to be two in three enrollees.

Prior Experience in Vocational Agriculture

The majority of the students enrolled in the present program (67 percent) are not familiar with vocational agriculture according to data shown in Table 5.

TABLE 4: PILOT PROGRAM PARTICIPANTS ACCORDING TO RESIDENCE

Residence	1971-1972		1970-1971		1969-1970		1968-1969	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Farm	120	32	88	28	82	31	67	34
Non-Farm	252	68	224	72	187	69	131	66
Totals	372*	100	312	100	269	100	198	100

* Three students did not report their residence

Table 5: Prior Experience In Vocational Agriculture By Residence

Years of Vocational Agriculture Completed	Residence				Total	Percent
	Farm		Non-Farm			
	Number	Percent	Number	Percent		
No Agriculture	47	39	197	81	244	67
One Year	8	7	24	10	32	9
Two Years	27	22	12	5	39	11
Three Years or More	38	32	11	4	49	13
Totals	120	100	244	100	364*	100

* Three students did not report residence and 8 students gave no response

Of the non-farm students enrolled in the present program 197 or 81 percent of the non-farm total are taking vocational agriculture for the first time. Seventy-six percent of the pilot program students have had one or less years of experience taking vocational agriculture courses. This indicates that a significant number of students have only recently become interested in the vocational agriculture program.

Although data from past programs shows that the majority of the participants had some vocational agriculture experience this percentage has been declining steadily since the programs began in 1968 (See Table 6).

TABLE 6: PRIOR EXPERIENCE IN VOCATIONAL AGRICULTURE BY YEAR

Years of Vocational Agriculture Completed	1971-1972		1970-1971		1969-1970		1968-1969	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
No Agriculture	244	67	133	43	98	36	41	
One Year	32	9	41	13	64	24		
Two Years	39	11	76	24	47	18		
Three or More Years	49	13	62	20	60	22	—	
Totals	364	100	312	100	269	100	41	

Scholastic Performance in Vocational Agriculture

The majority of both groups of enrollees, farm and non-farm, report average grades in vocational agriculture courses. The data in Table 7 shows a higher percent of farm students reporting above average grades in vocational agriculture than did non-farm students. However, the difference is smaller than last year when 60 percent of farm students and 41 percent of non-farm students reported above average grades. The four year trend consistently shows a larger percent of farm students earning above average grades in vocational agriculture than did non-farm students. These data suggest that residence does have an effect on performance in vocational agriculture.

Scholastic Performance in Prior Academic Courses

On the basis of academic grades reported by the students (Table 8) the members of the pilot programs are largely students of average scholastic ability (73 percent). The percent of individuals reporting average grades in academic work has tended to increase very slightly throughout the four years of the pilot program. The student getting above average grades in vocational agriculture has a 33 percent likelihood of maintaining above average grades in academic courses. (This compares with a 50 percent likelihood last year). However, students with above average grades in academic courses have nearly a 100 percent chance of getting above average grades in vocational agriculture.

Occupational Experience

The backgroung that the pilot program students had in terms of occupational experience is shown in Table 9. Determination of extensive

TABLE 7: RELATIONSHIP OF RESIDENCE TO SCHOLASTIC PERFORMANCE IN PREVIOUS VOCATIONAL AGRICULTURE

Scholastic Performance in Vocational Agriculture	Residence				Group Totals	
	Farm		Non-Farm			
	Number	Percent	Number	Percent	Number	Percent
Above Average Grade	33	44	33	38	66	41
Average Grades	40	53	47	55	87	54
Below Average Grades	2	3	6	7	8	5
Sub Totals	75	100	86	100	161	100
Not Reported			13		13	
No Previous Vo-Ag	45		153		198	
Total	120		252		372	

Higher percentage of farm residents reported above one grade in agriculture 44 percent than did non-farm residents 38 percent

Majority of both farm and non-farm reported average grades

TABLE 8: PAST GENERAL SCHOLASTIC PERFORMANCE OF PILOT PROGRAM PARTICIPANTS BY GRADES IN VOCATIONAL AGRICULTURE

Scholastic Performance in Vocational Agriculture	General Scholastic Performance Percent When N=375			Total Percent 1971-1972* N=357
	Above Average	Average	Below Average	
No Prior Vocational Agriculture	14	38	3	55
Above Average	6	12	0	18
Average	1	22	1	24
Below Average	0	1	1	2
Total Percent	21	73	5	99

*Not equal to 100 due to rounding errors

TABLE 9: PERCENT OF STUDENTS POSSESSING OCCUPATIONAL EXPERIENCE, BY YEAR

Occupational Experience	1971-1972 Number	1971-1972 Percent	1970-1971 Percent	1969-1970 Percent	1968-1969 Percent
Extensive in Agriculture	65	17.5	24	19	15
Some Agriculture	65	17.5	16	26	49
Sub-Total Students Having Prior Experience in Ag.	130	35	40	45	64
Non-Ag. Occupational Experience	34	9	22	21	5
Occupational Experience For This Course First They Are To Have	90	24	36	34	31
Sub-Total Students Without Prior Ag. Experience	124	33	58	55	36
Not Reported	121	32	2	x	x
Totals	375	100	100	100	100

experience was largely a value judgment to identify well developed occupational experience programs. An example of a well developed occupational experience program includes ownership of crop or livestock programs that have been developed past the initial stages and shows potential as an enterprise. Occupational experience requiring an average of 20 hours or more per week was also considered extensive.

There has been a steady decline in the percent of students reporting prior occupational experience in agriculture over the four year period. Table 9 shows that only 34 percent of the students reported prior occupational experience in agriculture in the current programs compared to 40 percent in 1970-1971, 45 percent in 1969-1970 and 64 percent in 1968-1969. The steady increase in non-agricultural experience which took place in the past three years has now dropped sharply to 9 percent of the total compared to 22 percent last year. For the most part, these data reveal that those students enrolling for the fourth year of the pilot programs report less occupational and agricultural experience than did students enrolled in earlier programs. It must be noted that figures for the current program may not be entirely accurate due to the large number of students not reporting (32 percent).

Table 10 shows the influence of residency on occupational experience. Of those students with extensive experience in agriculture 83 percent

TABLE 10: INFLUENCE OF RESIDENCE ON OCCUPATIONAL EXPERIENCE PRIOR TO ENROLLING IN THE PILOT COURSE

Occupational Experience Prior to Participating in Pilot Course		Residence: Farm Number	Farm Percent	Non-Farm Number	Non-Farm Percent	Totals Number	Totals Percent
Extensive Experience in Agriculture	1971-72	54	83	11	17	65	100
	1970-71	51	69	23	31	74	100
	1969-70	44	85	8	15	52	100
	1968-69	25	83	5	17	30	100
Some Experience in Agriculture	1971-72	34	53	30	47	64	100
	1970-71	18	36	32	64	50	100
	1969-70	22	32	47	68	69	100
	1968-69	34	35	63	65	97	100
Some Non-Agriculture Work Experience	1971-72	1	3	32	97	33	100
	1970-71	2	3	65	97	67	100
	1969-70	1	2	55	98	56	100
	1968-69	0	0	9	100	9	100
No Previous Occupational Experience	1971-72	31	15	179	85	210	100
	1970-71	17	14	104	86	121	100
	1969-70	15	16	77	84	92	100
	1968-69	8	13	54	87	62	100

were farm residents and 17 percent were non-farm residents. These percentages have shifted sharply from last year when 69 percent were farm residents and 31 percent were non-farm residents, however, they are about the same as the first two years of the pilot program. The percentage of farm and non-farm students in the other categories has remained fairly constant throughout the four years except in the current year when farm students made up over half the students with some experience in agriculture compared with only about one-third in past years.

Extra Curricular Activities

Student distribution among seven levels of extra curricular involvement is displayed in Table 11. These levels of extra curricular involvement were classified as follows:

1. Intensive--Two or more activities in school and one or more out (or reverse) plus officer.

2. Active--Two or more activities in school and one or more out (or reverse).

TABLE 11: PARTICIPATION IN EXTRA CURRICULAR ACTIVITIES REPORTED BY PILOT PROGRAM PARTICIPANTS, BY RESIDENCE AND YEAR

Extra Curricular Activities	Residence		Year Total Percent			
	Percent Farm	Percent Non-Farm*	1971-72*	1970-71	1969-70	1968-69
Intensive	18	10	12	15	18	14
Active	14	11	12	16	12	20
Intensive in School	6	5	5	6	6	8
A Little Active in School	39	44	43	43	46	37
Extensive Out of School	1	3	2	1	x	x
A Little Active Out of School	9	8	8	7	5	x
No Activity Reported	13	20	17	12	13	13
Total Percent	100	101	99	100	100	92

*Not equal to 100 due to rounding error

3. Intensive in School--Two or more activities in school plus officer.

4. A Little Active in School--One or two organizations or activities in school.

5. Extensive Out of School--Two or more organizations or activities, plus officer.

6. A Little Activity Out of School--One or two organizations or activities out of school.

7. No Activity Reported.

In general the students enrolled in the current pilot program reported less activity than past years. Even so most students were fairly active in extra curricular activities. One-fourth of the total enrollment were involved in both school and out of school activities compared to

about one-third last year. The number of students involved in one or two organizations in school has remained nearly constant over the four year period (43 percent for the current year). As in the past, a larger percentage of farm students reported intensive and active participation (32 percent) than did non-farm students (21 percent). Farm students were generally more active than non-farm students. Thirteen percent of this group reported no activity compared to 20 percent of the non-farm students reporting no activity. The total number of students reporting no extra curricular activity is higher for the current year (17 percent compared with 12 percent last year).

REASONS FOR PARTICIPATING

This section provides information concerning two questions. These are: (1) What was the most influential reason in the students decision to enroll in the Pilot Programs? (2) What objectives do the students establish for these courses and what type of help do they expect?

The questionnaire included three objectives on fixed alternative type questions which became the source of data for this section. Responses to these three questions very consistently pointed to the conclusion that the majority of students have not entered a realistic stage of occupational choice and as such are primarily interested in exploring occupations and the world of work.

Factors in the Students Decision to Enroll

Each student was asked to make one selection from the list in Table 12 as his primary reason for enrolling in the pilot program. The responses indicate that the students enrolled on an elective basis as shown by the fact that almost all students enrolled as a result of their own choice. During the current year 75.7 percent of the students enrolled for exploratory purposes. This is an increase over past years. Students enrolling for exploratory purposes was 61.5 percent last year.

As in the past, selection number three is attractive to students having definite or career preparation objectives. However the number of students choosing this reason is down from past years. Twenty-four percent chose this reason during the current year compared with 39 percent the preceding two years. The 6-4 ratio of students enrolling for exploratory/definite reasons has now moved to a 3-1 ratio. This information reveals a sharp decrease in pilot program students who have definite career plans.

Reasons for Enrolling in Relation to Previous Occupational Experience

It will be recalled that students were assigned to the following categories to explain prior occupational experience: (1) extensive experience in agriculture, (2) some occupational experience in agriculture,

TABLE 12: REASONS FOR ENROLLING IN THE PILOT PROGRAM

Reasons For Enrolling in Vocational Course	Student Response					
	Numbers			Percent		
	1971-72	1970-71	1969-70	1971-72	1970-71	1969-70
1. Was assigned to the course	4	1	0	1.1	0.3	0.0
2. There weren't any other courses I wanted to take	23	10	16	6.0	3.2	6.0
3. It fits into my career plans for the future	91	120	105	24.3	38.5	39.0
4. My friends are taking it	5	6	1	1.3	1.9	0.5
5. I was advised by the guidance counselor to take it	19	6	16	5.1	1.9	6.0
6. I was urged by the instructor of the course to take it	9	3	6	2.4	1.0	2.0
7. I really don't know why I'm taking it	10	14	4	2.7	4.5	1.5
8. To find out what it would be like to follow this kind of work	151	108	96	40.3	34.6	36.0
9. Other	63	44	25	16.8	14.1	9.0
Total	375	312	269	100.0	100.0	100.0

Fewer students chose item 3 than in the past

More students chose item 8 than in the past

(3) some non-agricultural work experience, (4) no occupational experience prior to enrolling, and (5) no response. Categories one and two can be combined to form a group having had occupational experience in agriculture. Table 13 compares the reasons for enrolling in the two categories of occupational experience and reveals the influence that occupational experience has on the student to enroll for definite reasons. Twice as many students with prior agriculture experience enrolled for definite career reasons as did students with no prior experience (36 percent compared with 18 percent).

Over the four year period there has been a steady decline in the percentage of students with experiences in agriculture enrolling for career preparation. Of the students with prior experience in agriculture 36 percent enrolled in the pilot program for career preparation rather than career exploration during the current year. This percent was 42, 49 and 63 for the years 1970-71, 1969-70 and 1968-69 respectively.

Table 14 compares the reason for enrolling with residence. We can observe from this data that farm students had a slightly higher percent enrolling for career preparation than did non-farm students.

TABLE 13: REASONS FOR ENROLLING EXPLAINED IN RELATION TO PREVIOUS OCCUPATIONAL EXPERIENCE

Reasons for Enrolling in This Vocational Course	Prior Experience in Agriculture		First Experience in Agriculture		Totals	
	Number	Percent	Number	Percent	Number	Percent
It fits into my career plans for the future	47	36	44	18	91	24
To find out what it would be like to follow this kind of work	48	37	103	42	151	40
Other reasons	35	27	98	40	133	35
Totals	130	100	245	100	375	99

TABLE 14: INFLUENCE OF RESIDENCE ON REASON SELECTED FOR ENROLLING

Reasons For Enrolling in the Vocational Course	Residence				Total For Group	
	Farm		Non-Farm			
	Number	Percent	Number	Percent	Number	Percent
1. It fits into my career plans for the future	33	27	58	23	91	24
2. To find out what it would be like to follow this kind of work	49	41	101	40	150	40
3. Other	38	32	93	37	131	35
Totals	120	100	252	100	372	99

*Three students didn't report residence

Student Objectives--Exploration or Career Preparation

Once enrolled what general objectives did the students have for the pilot courses? What did they hope the course would do for them? This discussion is concerned with summarizing and explaining the results when students were asked whether they had established career exploration or career preparation as the general objective for this vocational course. In Table 15 these alternatives are listed as they were phrased in the questionnaire. Number one represents an exploratory objective and number two includes students with objectives involving occupational preparation. The students choice between these alternatives was a matter of deciding his personal objectives for the course, based largely on where he finds himself in the process of occupational choice. Seventy-nine percent of the students had exploratory objectives. These data are consistent with the 3-1 exploratory/definite ratio discussed previously (Table 12) and indicate one type of validity for the instrument. These data presented in Table 15 have changed somewhat from previous years with a higher percent of students stating exploratory objectives than in the past.

When considering residence (farm and non-farm) the majority of both groups enrolled for exploratory reasons (77 percent of farm students and 80 percent of non-farm students). This indicates that residence does not alter the enrollees personal objectives for the course. There has been, however, some shifting of the responses. The percentage of farm students choosing the pilot program for exploratory reasons has increased steadily over the four year period. The number of non-farm students enrolling for definite career objectives has dropped to only 18 percent for the current year after a steady increase during the previous three years from 21 percent in 1968-69 to 33 percent last year.

TABLE 15: STUDENTS OBJECTIVES BY RESIDENCE AND YEAR

Questionnaire Alternatives	Year	Residence: Farm Number	Farm Percent	Non-Farm Number	Non-Farm Percent	Total Number	Total Percent
1. Help to make a decision in regard to choosing an occupation	1971-72	92	77	202	80	294	79
	1970-71	58	66	147	66	205	66
	1969-70	49	60	137	73	186	69
	1968-69	38	57	99	76	137	67
2. Help to qualify in an area of work already chosen	1971-72	27	22	45	18	72	19
	1970-71	30	34	74	33	104	33
	1969-70	33	40	50	27	83	31
	1968-69	28	41	28	21	56	29
3. No Response	1971-72	1	1	5	2	6	2
	1970-71	0	0	3	1	3	1
	1969-70	0	0	0	0	0	0
	1968-69	1	2	4	3	5	2
Totals	1971-72	120	100	252	100	372	100
	1970-71	88	100	224	100	312	100
	1969-70	82	100	187	100	269	100
	1968-69	69	100	131	100	198	100

When these objectives were compared with those students who report prior occupational experience and those who report no occupational experience (Table 16), the majority of both groups entered the pilot programs for exploratory objectives. The students with prior occupational experience were more likely to enroll for definite reasons than those with no prior experience, as shown by the 28 percent with prior experience and 15 percent without prior experience. These categories "prior experience" and "no prior experience" were obtained by combining the categories presented in Table 10.

The Type of Help Students Expect

A third question in this series accumulated data on more specific objectives, or what may be called needs that students expected their respective courses to meet. Students were able to select one or more of the eight alternatives that are seen listed in Table 17. The same consistent ratio between responses to exploratory and career objectives is evident here and needs little explanation. Alternative number one represents a common exploratory objective and number two was one of the most popular career preparation objectives. The alternatives were ranked in nearly identical order to the three previous years.

TABLE 16: EXPLORATORY AND CAREER OBJECTIVE GROUP EXPLAINED IN TERMS OF PREVIOUS OCCUPATIONAL EXPERIENCE

Student Objectives	Occupational Experience: Prior Experience in Agriculture Number	Percent	No Prior Experience in Agriculture Number	Percent	Totals Number	Percent
1. Help to make a decision in regard to an occupation	93	72	203	83	296	79
2. Help to qualify in an area already chosen	36	28	36	15	72	19
3. Non Reported	1	1	6	2	7	2
Totals	130	101*	245	100	375	100

*Not equal to 100 due to rounding errors

It seems that a fitting summary to this section on reasons for participation is that students at the age and grade level studied were acutely aware of the need to decide on an occupation. The need for a means to explore occupational areas was the result of that awareness, and thus the pilot programs are serving student needs.

CAREER PLANS

Type of Career Planned

The questionnaire included a series of four subjective or open ended questions to supply data on students' career plans. The first in the series was a question asking them to state their preference if they were absolutely free to go into any occupation. Responses to this question were placed in agriculture or non-agriculture groups, with the agricultural interests being classified according to the taxonomy set by the U.S. Office of Education. The agricultural interests were classified as belonging to one of the following occupational categories: conservation, production, supplies, mechanics, products, horticulture, resources, forestry, and other agriculture. Table 18 reveals that 37 percent of the students identified careers that were classified as agricultural, and 63 percent non-agricultural. This ratio has shifted somewhat from past programs which showed a ratio of about 50-50.

To help clarify this entire section on career plans, it should be pointed out that a rather rigid approach was taken by the researcher in classifying agricultural occupations. This may be the main reason for the

TABLE 17: SELECTION OF ONE OR MORE SPECIFIC NEEDS THE COURSE IS EXPECTED TO MEET, BY YEAR

Questionnaire Responses	Number of Responses 1971-72	1970-71	1969-70	1968-69
1. Making it easier to make a wise decision when choosing an occupation	189	158	115	100
2. Learn knowledge and skills for capability in a specific job to be taken after high school	159	131	107	74
3. Help to locate a job after graduation from high school	140	67	80	56
4. Learn good work habits	95	82	61	44
5. Help to prepare for a post high school vocational technical course	89	83	67	46
6. Help understand how to get a good job	71	62	57	30
7. Help to make other courses more meaningful	47	33	24	14
8. Help to get ready for an apprenticeship	25	12	18	18
Total Number of Respondents	375	312	269	198

high level of non-agricultural interests. However, many of the occupations in this section considered non-agricultural by the researcher have a potential for becoming agricultural related or agri-business jobs. Examples of these would be the many respondents who indicate an interest in working as a plumber, carpenter, welder, mechanic, truck driver or other similar occupations. These could be agricultural jobs if such jobs were located in an agricultural business.

A student's career plans can be influenced by characteristics in his background. Residence has a noticeable influence. From the residence-career plans relationships as it is explained in Table 18 the following generalizations can be made:

1. Farm students seem to be making a choice between either agricultural production (farming) or non-agricultural occupations. Ninety-one percent of the farm students are included in these two categories.

TABLE 18: AGRICULTURE CAREER INTERESTS BY RESIDENCE

Agricultural Careers	Residence				Group Totals	
	Farm		Non-Farm			
	Number	Percent	Number	Percent	Number	Percent
Agriculture Conservation	0	0	20	7.9	20	5.4
Agriculture Production	34	28.3	10	4.0	44	11.8
Agriculture Supplies	0	0	0	0	0	0
Agriculture Mechanics	3	2.5	0	0	3	0.8
Agriculture Products	0	0	4	1.6	4	1.1
Ornamental Horticulture	2	1.7	4	1.6	6	1.6
Agriculture Resources	3	2.5	32	12.7	35	9.4
Forestry	0	0	17	6.7	17	4.6
Other Agriculture	2	1.7	8	3.2	10	2.7
Non-Agriculture	76	63.3	157	62.3	233	62.6
Totals	120	100.0	252	100.0	372	100.0

2. Non-farm students seem to have a wider variety of career choices with the highest percent choosing non-agricultural occupations (62%). Other popular career choices among this group are agriculture conservation, agriculture resources, and forestry.

An examination of Table 19 shows that a significantly larger number of students with one or more years of agriculture study are planning a career in agriculture than are students with no prior agriculture study. For example, out of 43 students planning careers in farming 33 had at least one year in vocational agriculture. The number of years of agriculture study beyond one year, however, does not seem to increase the likelihood that a student will choose an agricultural career. This is inconsistent with the pattern established in previous programs which

TABLE 19: INFLUENCE OF ENROLLMENT IN AGRICULTURE PRIOR TO PILOT PROGRAM ON CAREER PLANS

Agriculture Careers	Years of Agriculture Study: None No.	None %	One No.	One %	Two No.	Two %	Three No.	Three %	Total No.	Total %
1. Agricultural Conservation	16	6.5	3	9.4	0	0	1	2.1	20	5.5
2. Agricultural Production	10	4.0	3	9.4	15	38.5	15	31.9	43	11.8
3. Agricultural Supplies	0	0	0	0	0	0	0	0	0	0
4. Agricultural Mechanics	0	0	0	0	1	2.6	2	4.3	3	0.8
5. Agricultural Products	2	0.8	0	0	0	0	1	2.1	3	0.8
6. Ornamental Horticulture	5	2.0	1	3.1	0	0	0	0	6	1.7
7. Agricultural Resources	27	11.0	4	12.5	3	7.7	0	0	34	9.3
8. Forestry	11	4.5	3	9.4	0	0	0	0	14	3.8
9. Non-Agriculture	173	70.0	15	46.8	18	46.1	26	55.3	232	63.6
10. Other Agriculture	3	1.2	3	9.4	2	5.1	2	4.3	10	2.7
Totals	247	100.0	32	100.0	39	100.0	47	100.0	365	100.0

As number of years in agriculture increased tendency toward agricultural careers increased

showed that as the number of years in agriculture increased, the tendency for a student to plan a career in agriculture increased.

It is difficult to point out any characteristic that has a direct influence on career plans. Residence and number of years in vocational agriculture both had some influence on career plans of students in the current pilot program. However, these influences are somewhat inconsistent with results rated in previous programs.

Consistency of Career Plans

Had the student's thinking on career matured to the point that it had narrowed to a related cluster of occupations? Or, are they still considering a wide range of jobs, as is characteristic of the early teenage years? To answer this we analyze the second question in the series on career plans. The students were requested to do more specific thinking in this case as each student was asked to list three occupations that he was seriously considering entering. The three occupations were compared and rated as consistent or inconsistent. The researcher used his personal judgment in determining if the responses were consistent or inconsistent. If a student has as follows: teacher, doctor, engineer, he would be rated as consistent. A student listing truck driver, welder, and architect, would be inconsistent. Responses could be consistent in the following ways: require the same level of education; perform the same type tasks, such as working with people; or earn the same level of pay. The researcher rated the responses consistent if two out of three responses could be fitted in one category.

The results show that only 19 percent of the students had consistent occupational objectives at the time the study was made. This shows a steady decrease in the percent of students with consistent occupational objectives during the last three years (Table 20).

TABLE 20: CONSISTENCY OF OCCUPATIONS BEING CONSIDERED, BY YEAR

Level of Consistency	Group Results 1971-72 Number	1971-72 Percent	1970-71 Percent	1969-70 Percent	1968-69 Percent
1. Consistent	72	19	24	55	38
2. Inconsistent	247	66	62	44	60
3. No Response	56	15	14	1	2
Totals	375	100	100	100	100

OCCUPATIONAL ASPIRATIONS AND EXPECTATIONS

To provide data on occupational aspirations, each student was asked to state the type of work he really hoped (aspiration) to get in the future. The next and last question in the series on career plans asked for the type of work he really expected (expectations) to get. Differences between these two classifications reflects what one would really like to do for a living, and what he really expects to do. Normally a teenagers aspirations are higher than his expectations. Table 21 presents the analysis when aspirations and expectations are classified according to the U.S. Employment Service scheme, which is a socio-economic scale. The following points are revealed:

TABLE 21: OCCUPATIONAL ASPIRATIONS AND EXPECTATIONS OF PILOT PROGRAM ENROLLEES

Occupational Level	Percent of Total					
	Aspiring To			Expecting To		
	1971-72	1970-71	1969-70	1971-72	1970-71	1969-70
1. Professional & Management	9	8	10	6	4	5
2. Clerical & Sales	2	2	4	2	2	5
3. Service Occupation	6	9	10	6	7	10
4. Agricultural Occupations	36	46	36	31	34	28
5. Skilled Occupations	13	18	24	10	15	23
6. Semi-Skilled Occupations	22	6	4	22	9	2
7. Unskilled Occupations	4	6	3	11	15	11
No Response	8	5	9	12	14	16
Totals	100	100	100	100	100	100

More students seeking and expecting to get semi-skilled occupations (22%) expecting in 1971-72 only 9% in 1970-71 and 2% in 1969-70

Students aspire to higher socio-economic positions than they expect to obtain

1. The responses to the question on expectation show a general downward shift in comparison to aspiration. That is, most of the students aspire to higher socio-economic positions than they expect to obtain.

2. Thirty-six percent of the students aspire to a career in agriculture, and 31 percent expect to reach that goal.

3. Nine percent aspire to professional and management occupations, with six percent expecting to reach that goal.

4. The unskilled and no response categories appear to have absorbed a larger number of the students who expected to obtain occupations lower than their aspirations. Only four percent of the students aspired to unskilled jobs but 11 percent had that level of expectation.

5. The percent of students aspiring to and expecting to enter semi-skilled occupations has increased over past years to 22 percent in both instances.

To provide a meaningful description of differences between aspiration and expectation, it was necessary to consider the responses of each student, and decide whether his aspiration was higher than, the same as, or lower than his expectation. Table 22 reveals that in 58 percent of the cases the students showed some maturity. On the basis of these results, we can assume that over half of the students are ready to make a realistic career plan.

Table 23 points to an interesting fact of the lack of difference between aspiration and expectation levels within the group of farm boys who planned for agricultural occupations. In contrast is the 34 percent of non-farm students who aspired to an agricultural occupation, with the 25 percent expecting to achieve this goal. There appears to be no significant difference between the aspiration and expectation levels of farm students vs. non-farm students.

RELATEDNESS OF ALL INDICATED CAREER PLANS

As each student replied to the series of questions on career plans, he developed his own list of six career and occupational interests. The list of responses from each student was studied and classified in terms of relatedness. The researcher used the following categories:

1. Highly related workwise (5 out of 6)
2. Highly related educationally (5 out of 6)
3. Highly related income wise (5 out of 6)
4. Some work relationship (4 out of 6)
5. Some educational relationship (4 out of 6)
6. Some income relationship (4 out of 6)
7. Little or no relationship

Group totals for this classification are found in Table 24. On the basis of these data 45 percent of the students in the pilot programs had limited their plans to a related cluster of occupations. Twenty-one percent of all respondents had limited their plans to highly related occupations.

There was a slight difference by residence in identifying a cluster of occupations. Fifty percent of farm students had narrowed their choice to a cluster of occupations while 43 percent of the non-farm students had done so.

TABLE 22: SUMMARY OF ASPIRATION-EXPECTATION DIFFERENCES

	Percent of Total		
	1971-72	1970-71	1969-70
1. Aspiration higher than expectation	21	30	25
2. Aspiration same level as expectation	58	64	69
3. Aspiration lower than expectation	8	5	6
4. No response	13	1	—
Totals	100	100	100

TABLE 23: AFFECT OF RESIDENCE ON OCCUPATIONAL ASPIRATIONS AND EXPECTATIONS

Occupational Level	Percent Response			
	Farm		Non-Farm	
	Aspired to	Expected	Aspired to	Expected
1. Professional & Managerial	6	3	10	7
2. Clerical & Sales	3	2	2	3
3. Service Occupations	5	3	6	7
4. Agricultural Occupations	40	43	34	25
5. Skilled Occupations	13	8	13	11
6. Semi-Skilled Occupations	28	23	20	21
7. Un-Skilled Occupations	2	10	4	12
8. No Response	5	7	10	15
Totals	102	99	99	101

TABLE 24: RELATEDNESS EVIDENT AMONG THE STUDENTS RESPONSE TO CAREER PLANS QUESTION SERIES

Relatedness	Residence: Farm Number	Farm Percent	Non-Farm Number	Non-Farm Percent	Group Totals Number	Group Totals Percent
1. Highly related work wise	22	18.4	39	15.6	61	16.4
2. Highly related educationally	4	3.3	9	3.6	13	3.5
3. Highly related income wise	3	2.5	4	1.6	7	1.9
4. Some work relationship	27	22.5	44	17.6	71	19.0
5. Some educational relationship	3	2.5	9	3.6	12	3.2
6. Some income relationship	1	0.8	3	1.2	4	1.1
7. Little or no relationship	60	50.0	143	56.8	203	54.7
Totals	120	100.0	251	100.0	371	99.8*

*Not equal to 100 due to rounding errors

VOCATIONAL MATURITY

A vocational maturity score was calculated for each student. It was possible for him to accumulate a maximum of eight points. The following qualifications were based on questionnaire responses, and were necessary to earn points toward their score:

Extensive occupational experience in agriculture--award one point.

Intensive participation in extra-curricular activities--award one point.

Selection of career preparation as a general objective--award one point.

Indication of career plans as the basis for their decision to enroll--award one point.

Indicate preparation for a career or post-secondary course as the type of help expected from the pilot program--award one point.

Expect an occupation on the same socio-economic level to which they aspired--award one point.

All indicated career plans classified as related in some way but not highly related--award one point.

All indicated career plans classified as highly related--award two points.

Total possible--eight points.

Use of these criteria distributed most of the students within the one through five score range, with eight percent of the students having a zero score, and limited numbers having scores six, seven, or eight (Table 25). The mean vocational maturity score was 2.67 contrasted to 3.19 last year and 3.33 two years ago. The higher the score, the more vocationally mature the respondent is thought to be.

The students vocational maturity score was a function of the eight integral parts already explained. Tables relating those variables or characteristics to maturity scores, therefore, showed a strong positive correlation in every case. More meaningful data was provided by studying relationships between students' scores and other characteristics that were not factors in that score. Residence had a very obvious influence on vocational scores. In relating residence to the vocational maturity scores (Table 26) it was revealed that 42 percent of the farm students received scores of four and above, while 25 percent of the non-farm students were in that score range. The mean vocational maturity score for students from farms was 3.20, while for non-farm students it was 1.94.

Grade in school did not greatly influence the vocational maturity level although seniors appear to have a slightly higher mean score than do juniors--2.74 for seniors compared to 2.50 for juniors.

To summarize, the wide distribution of scores seems to be the dominant point of this section. This underscores the idea that these courses are being challenged to meet the needs of students representing all phases and stages in the vocational development process.

TABLE 25: DISTRIBUTION OF VOCATIONAL MATURITY SCORES

	Students Receiving					
	Number			Percent		
Score	1971-72	1970-71	1969-70	1971-72	1970-71	1969-70
0	32	29	16	8	9	6
1	86	38	47	23	12	17
2	81	62	38	22	20	14
3	62	57	45	17	18	17
4	50	43	41	13	14	15
5	35	41	39	9	13	15
6	17	26	25	4	9	9
7	6	10	14	2	3	5
8	6	6	4	2	2	2
Totals	375	312	269	100	100	100
Mean Score	2.67	3.19	3.33			

TABLE 26: VOCATIONAL MATURITY SCORES DESCRIBED ACCORDING TO RESIDENCE

Score Range	Farm						Non-Farm						Group Totals					
	Number			Percent			Number			Percent			Number			Percent		
	71-72	70-71	69-70	71-72	70-71	69-70	71-72	70-71	69-70	71-72	70-71	69-70	71-72	70-71	69-70	71-72	70-71	69-70
Receiving Scores 0-3	70	45	29	58	51	35	189	141	117	75	63	63	261	186	146	70	60	54
Receiving Scores 4-8	50	43	53	42	49	66	63	83	70	25	37	37	114	126	123	30	40	46
Totals	120	88	82	100	100	101	252	224	187	100	100	100	375	312	269	100	100	100
Mean Score	3.2.						2.41											

VT 019 031

VT 019 031
EVALUATION REPORT OF VOCATIONAL-TECHNICAL EDUCATION IN MARYLAND, 1971.

MARYLAND STATE ADVISORY COUNCIL ON VOCATIONAL-TECHNICAL EDUCATION, BALTIMORE.
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IDENTIFIERS - *MARYLAND

ABSTRACT - SUMMARIZED ARE THE FINDINGS AND RECOMMENDATIONS EMERGING FROM AN EVALUATIVE ASSESSMENT OF VOCATIONAL-TECHNICAL EDUCATION PROGRAMS IN MARYLAND. THIS PROJECT EFFORT WAS THE WORK OF 25 INDIVIDUALS FROM VARIED SECTIONS OF THE STATE. FINDINGS OBTAINED WERE: (1) ALL OF THE STATE'S GOALS WERE NOT REALIZED BECAUSE OF INSUFFICIENT BUDGET APPROPRIATIONS AND STATE COMMITMENT, (2) WHILE VOCATIONAL-TECHNICAL PROGRAMS ARE AVAILABLE TO SOME DEGREE IN LOCAL SYSTEMS AND COMMUNITY COLLEGES, SOME SEGMENTS OF THE POPULATION STILL DO NOT HAVE READY ACCESS TO SUCH EDUCATION, (ESPECIALLY IN THE AREAS OF POST SECONDARY AND ADULT EDUCATION), AND (3) COUNCIL RECOMMENDATIONS INCLUDED IN THE 1970 EVALUATION REPORT DID NOT RECEIVE THE EXPECTED RESPONSE FROM THE STATE BOARD OF EDUCATION, NOR THE TOP ADMINISTRATIVE STAFF. TO ASSURE A MORE COMPREHENSIVE AND BETTER BALANCED PROGRAM, THE FOLLOWING RECOMMENDATIONS WERE OFFERED AS PRIORITIES: (1) THE STATE BOARD OF EDUCATION MAKE A GREATER COMMITMENT TO VOCATIONAL EDUCATION BY ESTABLISHING CLEARER PRIORITIES AND ALLOCATING AN INCREASED PERCENTAGE OF ITS BUDGET TO THE PROGRAM, (2) STUDIES BE CONDUCTED TO ESTABLISH PRIORITIES AND GOALS, AND (3) PROGRAMS BE ESTABLISHED TO ACQUAINT THE PUBLIC WITH VOCATIONAL EDUCATION. (AUTHOR/SN)

Evaluation Report

OF VOCATIONAL-TECHNICAL EDUCATION IN MARYLAND

by

Maryland Advisory Council

on

Vocational-Technical Education

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September 1971

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EDUCATION & WELFARE
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MARYLAND STATE ADVISORY COUNCIL

ON VOCATIONAL AND TECHNICAL EDUCATION

XXXX

EVALUATION REPORT FOR 1971

XXXX

SEPTEMBER 1, 1971

The Maryland State Advisory Council on Vocational and Technical Education is required, by law, to submit an annual evaluation report to the Commissioner of Education and the National Advisory Council. The Maryland Council is made up of twenty-five (25) members representing different segments and interests of the State's population. The interests and concerns of this type of representation are reflected in this report.

As a matter of record, the Council recognizes that vocational-technical education in the State has made significant progress during the past decade. Included in such progress, is the construction of numerous vocational-technical high schools, and community colleges with vocational-technical programs. Such institutions, of course, provide greatly expanded opportunities for an ever-increasing number of people to participate in some phase of vocational-technical education; thus, enhancing their ability to become or remain gainfully employed. In this respect, an awareness exists that other progressive programs are being developed which should serve to further enhance the image of vocational-technical education in the State.

With the preceding acknowledgement of the above the Advisory Council will devote the remainder of this report to pointing out some areas of concern as seen by the Council and recommending such action as it feels should help provide better educational opportunities for all of the citizens of Maryland.

PRIORITY RECOMMENDATIONS

The Maryland Advisory Council on Vocational and Technical Education lifts out of this report the following recommendations as being the most urgent:

1. The State Board of Education make a greater committment to Vocational-Technical Education by clearly establishing its priorities in that area and by allocating an increased percentage of its budget to that end.

2. The State Board of Education make a thorough study of Career Education and establish its goals and priorities in relation to its responsibilities in providing this as a part of every student's education.

3. The State Board of Education arrange for the development of a program to help build a favorable image toward the world of work and vocational-technical education. Such a program should include a series of workshops for school administrators, counselors, and teachers. Emphasis should be placed upon information about employment opportunities, educational requirements, economic and other benefits of the various vocations with primary attention devoted to those jobs requiring less than a baccalaureate degree. The workshops should involve extensive dialogue between educators and representatives of business, industry, labor, government, and other lay groups.

EVALUATION AREAS

I. State Goals and Priorities

While the State's goals for the most part were directed toward meeting the needs of the people, there are some cases where such goals apparently had little chance of being realized. A case in point is the recognition by those concerned that a strong need exists to reduce the ratio of vocational students to counselors from that of 440/1 to that of 400/1 as a start toward reaching an even lower ratio at some future date. Indications are that while efforts have been made toward reaching this goal, the net effect has proven to be minimal in that the same goal has appeared in State Plans for the last several years. This fact raises the question as to whether the State Department has really established this goal with a high enough priority within both the budget and the department to provide reasonable assurance that significant strides will be made toward reaching the desired ratio.

Relative to the above, the strong probability exists that previously established goals which remain largely unmet have resulted from a lack of meaningful data upon which to base planning and projections. This factor, again, may have been involved when the goal was included in the 1971 State Plan to work toward enrolling 30% of the secondary student group in vocational programs. Not only has this goal not been met, but the percentage figure has been subsequently reduced to 26.5% in the 1972 State Plan. In short, the Advisory Council found it difficult to determine in many instances to what extent the State goals

were met during the year since many of the goals were stated in terms of anticipated enrollment, an area in which there is considerable conflict in available data. For example, while a report from the U.S. Office of Education shows an enrollment for FY 70 in Maryland of 76,000 secondary students, a report from the Division of Vocational-Technical Education in response to a request from the Chairman of the Council, reported an enrollment of 175,000 for the same year. Moreover, the State Plan for FY 72 projects that 25% of secondary students will be enrolled in vocational-technical programs which would represent a total of approximately 59,000. This figure, if accurate, reflects a decrease as compared with the previous total of 76,000.

There is little indication that the goals and objectives of the State Plan and allocation of resources are influenced by students, employers, and other representatives of the public. While an effort has been made to involve representatives of other agencies on committees working on the State Plan, as experienced by the Advisory Council members, the impact of such participants on the Plan appears to be limited at most.

There is a feeling on the part of the Advisory Council that the State Plan is developed primarily to meet a requirement for Federal monies by the Division of Vocational-Technical Education with little or no involvement on the part of the State Board of Education and other Divisions within the State Department of Education. Under the circumstances, it is difficult to under-

stand how such a plan could be fully supported by those charged with its responsibility if all parties involved are not fully aware of the goals and priorities that are contained therein.

Governor Mandel placed Vocational-Technical Education as one of the priority items of his administration; however, to the knowledge of the Advisory Council, it has not appeared among those top priorities announced by the State Superintendent of Education. Moreover, at this point in time, the Advisory Council and the public in general is unaware of what priority the State Board of Education places on Vocational-Technical Education.

Although the intent of Congress in the Vocational Education Act was for States and local systems to match those Federal funds received under Part B of the Act, indications are that the State of Maryland makes no matching appropriations for this purpose except in the headquarters budget of the Division of Vocational-Technical Education. Even there, the trend has been to increase the use of Federal monies while decreasing the State allocation. In this respect, the budget for the current year, shows a decrease of approximately $100,000 in State monies and an increase of approximately $75,000 in Federal monies. The 73 budget shows an increase of only about $8,000 for the Division, or about 1% over the previous year, as compared with a 16% increase in the total education allotment. The trend of increasing the use of Federal monies in this area with a decrease in State monies continues. In short, with this lack of committment of State monies, the expansion of Vocational-Technical Education will depend largely

upon Federal funds and the ability and desire of the local systems to commit local funds for that purpose.

System superintendents and community college presidents readily admit that the least costly program is of a college preparatory or academic nature. And, without State requirements or financial incentives for providing Vocational-Technical Education, the budgetary pressures in such systems usually result in reductions in Vocational-Technical Education programs.

Relative to the above, one of the concerns often expressed by some local school officials is the extreme delay experienced in finding out how much Federal monies they can expect to receive for Vocational-Technical Education. The Federal Government's late funding during the past two years coupled with delays by the State have prevented the local systems from receiving Federal allocations until late in the year making it difficult, if not impossible, to make firm plans for needed programs. For FY 72, the Federal Government, acting with an air of urgency, provided the States with breakdown of allocations prior to the first of August in order that the States could make allotments to the local systems without undue delay.

The Advisory Council recommends that:

1. The State Plan contain more realistic goals accompanied with a description of the steps and a timetable associated with reaching each respective goal.

2. A mid-year and year-end status report be prepared and distributed on those goals included in the Plan.

3. The goals of the State Plan be integrated with and become a part of the overall goals established for education in the State.

4. The State Board of Education make a greater committment to Vocational-Technical Education by clearly establishing its priorities in that area and by allocating an increased percentage of its budget to that end.

5. The State Department of Education develop a procedure which will permit notification to local systems of expected vocational allotments within a minimum period of time after Federal allocations are made to the State.

II. The Effectiveness With Which The Needs Of The People Are Met

While vocational-technical programs are available to at least some degree in each local system as well as in the various community colleges, there are segments of the population that do not have ready access to such education, especially in the post-secondary and adult area. This, then, raises the question as to whether the State educational systems are effectively meeting the needs of the people to acquire the necessary skills through public education to enable them to become gainfully employed in the field of their choice. In the opinion of the Advisory Council, the Maryland educational system is lacking in that it does not dignify all work or careers based on their contributions to society. It does not, to a large extent, permit a student to choose and prepare for a career of his choice to the degree that it should based upon available facts, rather than misplaced values. Furthermore, it does not provide him with sufficient freedom to both change his goals and the means by which he can attain newly established goals in vocational-technical education as he progresses through life. Thus, based on the above statements, there is considerable doubt that equal education in a meaningful manner is currently available to all people in the State who might benefit from vocational-technical programs.

Maryland has made and is making progress in the area of Career Education and while this has not been publicly identified as a priority area by the State Board, the Division of Vocational-

Technical Education has pursued this as an area of concentration. In this respect, the Division is developing career information centers, career education workshops, team teaching of career education, graduate work in career education and other projects related thereto. A recent development in this area was the awarding of $300,000 by the U.S. Office of Education to the Vocational-Technical Division to conduct career education workshops on a national basis. In view of the above, the Advisory Council cannot help but wonder what goals might be reached in our schools through Career Education if both the State Board and the entire State Department of Education were to place a high priority on this project relative to its implementation on a state-wide basis.

Cooperation and coordination of programs and service between public agencies seems to need strengthening in some areas. A case in point, is the responsibility for post-secondary and adult vocational-technical education. While the State Board of Education and the Maryland State Board for Community Colleges both play a role; it is unclear as to what the responsibilities of each are. There are indications that college presidents would like to provide more occupational programs, but point to the added cost of such programs and the maze of paperwork as discouraging factors. It is the opinion of the Advisory Council that there is not only a lack of understanding between the State Board of Education and the Maryland State Board of Community Colleges as to their respective responsibilities but also an absence of strong

positive leadership on the part of the State Board relative to the development of post-secondary and adult vocational-technical education.

The Advisory Council has observed the development of working advisory committees in several school systems. With a growing utilization of lay advisory committees and efforts to provide employment data needs, it should follow that programs will increasingly reflect the needs of employers in kind and content. However, there is every indication that programs are still being developed in an institutional vacuum due to both the inabilities of the lay committees to function properly and the unwillingness of the system to develop a more flexible attitude toward lay involvement in educational programs.

Another item of great interest, both state-wide and nationally, is the attitude of educators relative to the role of the school system in assisting students in finding employment. In this respect, there are indications that many schools are increasing their efforts relative to assisting both students and graduates in finding employment. Here again, much of this effort appears to result from the recognition of need by the individual school system rather than by any priority placed on this activity by the State.

During the past year, it has become more evident to the Advisory Council that a need exists for a centralized system of collecting employment data for the purpose of planning education programs consistent with projected employment totals. While in

the past, there have been individual, uncoordinated efforts to provide such data, the results obtained have not always been a true reflection of existing conditions; thus, making it extremely difficult to use such data with any degree of confidence in planning for the future. At the present, the Council is aware of the efforts being made by the Division of Vocational-Technical Education to greatly expand their activity in this area to serve their own specific needs. Additionally, exploratory discussions have been held by the Department of Employment and Social Services and the Department of Economics and Community Development relative to finding a solution to this problem.

The Advisory Council recommends that:

1. The State Board of Education join efforts with the Departments of Employment and Social Services and Economic and Community Development in developing a statewide system of collecting and distributing data on current and projected manpower needs.

2. The State Board of Education and the Maryland State Board for Community Colleges establish a policy for implementation of functional responsibilities for the State Board for Community Colleges in vocational-technical education.

3. The need for community involvement in planning and administering local programs continue to be stressed with special emphasis placed on the utilization of local advisory councils.

4. The State Board of Education and its staff make a careful study of career education and establish its goals and priorities in relation to its responsibilities in providing this part of every student's education, and how it can best carry out this responsibility.

5. The State Board of Education develop a policy toward job placement of students as a part of its educational

responsibility.

6. The State Board of Education and its staff arrange for the development of a program to help build a favorable image toward the world of work and vocational-technical education. Such a program should include a series of workshops for school administrators, counselors, and teachers. Emphasis should be placed upon information about employment opportunities, educational requirements, economic and other benefits of the various vocations with primary attention devoted to those jobs requiring less than a baccalaureate degree. The workshops should involve extensive dialogue between educators and representatives of business, industry, labor, government, and other lay groups.

III. Extent The Advisory Council's Recommendations Received Due Consideration

The Advisory Council's evaluation report for 1970 was developed for general consumption even though the recommendations contained therein were limited for the most part to those responsibilities pertaining to the State Board and its staff.

Since the 1970 report, indications are that the Vocational-Technical Division has been active in either developing plans or initiating programs which in many respects appear to parallel the Council's viewpoints in at least two of the priority recommendations presented in 1970. A third recommendation dealing with the image of vocational-technical education would seem to require a major committment on the part of the State Department of Education for any degree of success to be realized in that area. In view of the importance attached to the third recommendation by the Council, it has again included this item in an earlier section of this report.

While the Advisory Council did not receive the expected response from the State Board and its top administrative staff relative to the contents of the 1970 evaluation report, the Division of Vocational-Technical Education provided a great deal of data at a two-day workshop conducted by the Council in June, 1971 with staff members from the Vocational-Technical Division.

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VT 019 058
KELLEY, PAUL R.
PROMOTING LOCAL EMPLOYMENT AND SERVICE EFFORTS THROUGH CAREER EXPLORATION: AN EXEMPLARY PROJECT IN CAREER EDUCATION. FINAL REPORT.

MAINE SCHOOL ADMINISTRATIVE DISTRICT 27., FT. KENT.
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IDENTIFIERS - FORT KENT; MAINE

ABSTRACT - IN AN ISOLATED AREA OF SCENIC BEAUTY IN THE NORTHEAST TIP OF MAINE, THE LOCAL HIGH SCHOOL GRADUATES FOUND FEW OPPORTUNITIES FOR EMPLOYMENT. SUMMARIZED IS A REPORT OF EFFORTS DIRECTED TOWARD THE DEVELOPMENT AND OPERATION OF A PROJECT DESIGNED TO PROVIDE REALISTIC PRACTICE EXPERIENCE CONTRIBUTING TOWARD THE DEVELOPMENT OF NEW VOCATIONAL COURSES AND PROGRAM MODIFICATIONS, AND PROVIDE DATA TO THE SCHOOL AND COMMUNITY IN ORDER TO EVALUATE THE POTENTIAL FOR THE DEVELOPMENT OF A TOUR GUIDE SERVICE AS A BUSINESS FOR EMPLOYMENT OF AREA GRADUATING YOUTH. THE PROJECT WAS OPERATED IN THE FORT KENT AREA, AND INVOLVED STUDENT PARTICIPANTS IN AN INTENSIVE 5-DAY TOUR-GUIDE WORKSHOP CONDUCTED BY A TEAM CONSISTING OF A LOCAL HISTORIAN, CUSTOM REPRESENTATIVES, AND MEMBERS OF THE BUSINESS COMMUNITY. GUIDE ROUTES DISTRIBUTED BY STUDENTS AS WELL AS OTHER ADVERTISING DEVICES WERE USED TO ATTRACT VISITORS. AN EVALUATION OF THE PROJECT REVEALED THAT: (1) AS MANY AS 18 PERSONS FOUND EMPLOYMENT AND WERE RICH IN THE KNOWLEDGE OF THEIR ENVIRONMENT, (2) THERE WERE IMPROVEMENTS IN LANGUAGE SKILLS AND OCCUPATIONAL CHOICE EXPANSIONS IN 33 PERCENT OF THE PARTICIPANTS, AND (3) THERE WAS AN APPARENTLY INSUFFICIENT CONTACT WITH THE DIVERSE TOURIST POPULATION TO PROVIDE SOCIAL ENRICHMENTS FOR STUDENTS IN THIS ISOLATED AREA. (SN)

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FINAL REPORT

PROMOTING LOCAL EMPLOYMENT AND SERVICE EFFORTS THROUGH CAREER EXPLORATION

AN EXEMPLARY PROJECT IN CAREER EDUCATION

CONDUCTED UNDER

PART D OF PUBLIC LAW 90-576

PAUL R. KELLY

MAINE SCHOOL ADMINISTRATIVE DISTRICT NO.27
69 PLEAST STREET
FORT KENT, MAINE 04743

NOVEMBER 1, 1972

AT019058

FINAL REPORT

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The project reported herein was performed pursuant to a grant from the Bureau of Adult, Vocational, and Technical Education, Office of Education, U. S. Department of Health, Education, and Welfare. Grantees undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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NOVEMBER 1, 1972

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SUMMARY

Maine School Administration District No: 27 Project PLEASE, operated from May 1 to Sept. 15, 1972. During the summer 18 junior and senior high school students were trained as tour guides.

The goals of the project were (1) to provide realistic practical experience which would contribute toward the possible development of new vocational courses and/or modification of existing programs. (2) the project is also designed to provide data to inform and motivate all segments of the school and community to evaluate the potential for the development of a tour guide service as a business, thereby creating new job opportunities for gruduating area youths.

The project objectives were as follows:

1. To provide practical and theoretical career exploration in tour guiding for high school juniors and seniors through actual work experience and classroom instruction.

2. To improve student's practical and applied knowledge and skills in such areas as language arts: Maine, Canadian-American and American History: and recreation, conservation education.

3. To provide educational and social enrichment to youths from an insular area through contact with a diverse tourist population.

4. To disseminate results of the project evaluation to school guidance counselors and vocational education department heads throughout the state of Maine.

The program operated in a section known for its natural beauty and the friendliness of its population. The Fort Kent area, however, is also characterized by a combination of high youth unemployment and few employment opportunities.

The training for the students consisted of a 5 day workshop conducted by a team of persons including a local historian, representatives of Customs and Immigration Services and of the business community. The students experienced actual guide training in the field as well as theoretical instruction.

Students were assigned to each of the 3 inlets to Fort Kent in order to attract patrons and to distribute mapped guide routes. Posters, pamphlets, newspaper articles, television and radio were also used to advertise the program.

To assess the effectiveness of the program, instructor and student evaluations were used. It was determined that because of the PLEASE Project, 18 students were gainfully employed. They became familiar with the history of the area and were sensitized to the natural beauty of their environment. Thirty-three percent of the participants improved noticeably in their language skills, and all expanded their

interests in occupational choices. Community services were provided in the form of tours for the elderly and children of the area, and by motivating the community and the school to assess the potential for the development of a tour guide service. However, there was insufficient contact with a diverse tourist population to provide social enrichment for students from an insular area.

As a pilot project, the program contained both success and failures. In order to minimize the weakness, it is recommended that:

1. An indepth assessment be made to determine the focus of tour guiding in the area e.g., perhaps canoeing, rock collecting, bicycling tours, would be more in demand than the conventional "in the car - show them the points of interest tour."

2. Provide opportunities for trainees to interact with a wider variety of workshop participants with diverse skills and expertise.

3. Develop alternative plans for days when there are few clients.

However, 3 of the 4 project objectives were met, indicating the program does have merit and should be continued and/or replicated but with modifications.

Body of the Report:

Goals and Objectives

Maine School Administration District No. 27 Project P L E A S E had two goals: (1) to provide realistic practical experience which would contribute toward possible development of new vocational courses and/or modification of existing programs. (2) To provide data to inform and motivate all segments of the school and community to evaluate the potential for development of a tour guide service as a business thereby creating new job opportunities for graduating area youths.

The specific project objectives were:

1. To provide theoretical career exploration in tour guiding for high school juniors and seniors through actual work experience and classroom instruction.

2. To improve student's practical and applied knowledge and skills in such areas as language arts: Maine, Canadian-American and American History, and recreation-conservation education.

3. To provide educational and social enrichment to youths from an insular area through contact with a diverse tourist population.

4. To disseminate results of the project evaluations to school guidance counselors and vocational education directors, through the state of Maine.

The Locale

The project was headquartered in Fort Kent, a town with a population of 4,750 located in the northeasterly tip of Maine. The area is noted for its scenic beauty, however, the area is also culturally and economically isolated with a population which is 85% bi-lingual. Agriculture and wood products are the primary source of income. The unemployment rate for the summer of 1972 was 11.8%. The student unemployment rate was estimated at 37%. Twelve per cent of the population is on state public assistance.

Needs Assessment

When it became known that Vocational Education Act funds were available, the high school guidance department conducted an informal survey to determine the number of juniors and seniors who wanted summer employment

but were unable to find jobs. Also the school superintendent met with community representatives to determine what kinds of services were needed which might be performed by students of that age group. It was agreed that tour guiding could be of benefit to the community and to the school in opening new areas of vocational education.

Program Description

Scope of the Program:

The purpose of the P L E A S E project was to promote local employment and service efforts through career exploration.

Personnel

A. Project Director

A teacher from SAD 27 was selected because of his ability to relate with students, his bi-lingualness, and also because of his familiarity with the local historical sites and other points of interest.

B. Instructors (Voluntary, part-time)

Local resource persons were used as instructors in the workshop.

C. Secretary

The program employed a secretary for typing, duplicating and other clerical duties. She also worked with the students in setting up menus for cookouts.

Procedures

This report covers the funding period from May 1, 1972 to Sept. 15, 1972. The P L E A S E Corps was a four month pilot program to promote local employment and service efforts through career exploration.

The project director, school personnel and guidance director conferred approximately ten times in the spring of 1972 to plan the project and bi-weekly during the summer to modify their strategies.

In June a five day workshop for the students was held which included:

1. A local historian who discussed in detail the history of the area.

2. Community representatives who discussed the proficiencies required for good tour guiding.

3. A representative of the Customs & Immigration Services who detailed the occupational training requirements and duties of custom officers and those of related occupations.

The project director and students then developed the specific areas for each tour. Paired students were assigned the responsibility for a particular tour.

Each pair of students conducted the director and other PLEASE Corps participants on a practice review of the tour for which they were responsible. The tours provided the opportunity for constructive input from the director and other students.

PLEASE Corps headquarters was a colorful geodesic dome located at the conjunction of the two main accesses to the town. Guides were also stationed at three other strategic points within the community.

Within the first three weeks, despite the efforts of the PLEASE Corps personnel it became apparent that there was insufficient interest in hiring tour guides on the part of tourists. The director and the business manager determined a change of focus was necessary.

While continuing to try to attract out of town tourists, the potential for resident tours was examined.

Three day long tours were organized for 150 elderly persons and three more tours were conducted for 120 children.

At conclusion of the program, the director and the students went on a camping trip to Quebec. In the course of the trip the campers took part in professionally conducted tours. The director used this experience for the purpose of review and discussion, comparing the professional tours with the PLEASE Corps' initial efforts.

Budget

The total cost of the program was $8,728.19 for a four and one half month period. These funds were provided by the Vocational Educational Act Fund. Of this total amount $6,475.60 was used for personnel salaries which includes an average of $261.97 paid to each student.

It should be noted that PLEASE Corps was a pilot program. As a consequence, initial cost of the program exceeds cost of evential reproduction. For example, costs of uniforms, signs, and tour booths are not recurring costs.

The project staff estimates replication costs to be approximately $450.00 per student.

EVALUATION

The project objectives were:

1. To provide practical and theoretical career exploration in tour guiding for high school seniors through actual work experience and classroom instruction.

2. To improve student's practical and applied knowledge and skills in such areas as language arts: Maine, Canadian-American and American History: and recreation, conservation.

3. To provide educational and social enrichment to youths from an insular area through contact with a diverse tourist population.

4. To disseminate the results of the project evaluation to school guidance counselors and vocational education department heads throughout the state of Maine.

The project participants were screened and selected by the guidance department on the basis of their potential for benefit from the program. Initially the plan was to hire and train students from poverty level families, but because many of these joined the Neighborhood Youth Corps, the PLEASE Project enrolled 18 juniors and seniors representing a good cross section of the total school population.

The age breakdown was: three 15 year olds; eleven 16 year olds; four 17 year olds. There were 7 females and 11 males, 9 were juniors and 9 seniors.

The attendance rate during the training sessions was 100%. There were no absentees during the field work except for one participant who left 2 weeks prior to the termination of the program to attend music camp. She was not replaced.

The original plans were to pre-test - post-test all student participants for practical and theoretical knowledge of tour guiding, of Maine, Canadian and American History; for skills in language and also an evaluation of the student's self concept. However, because of time pressures no pre-tests were administered.

Objectives 1 and 2 were evaluated by:

1. Instructor assessment of student's participation in the program. Appendix 1.

2. Instructor rating of student research papers concerned with various aspects of the area. Appendix II.

3. Student evaluations of their participation in the program. Appendix III.

Objective 3:

There was insufficient contact in terms of numbers and time involved to warrent development of an attitudinal-value inventory. It is anticipated that future programs will attend to their factor by a pre-assessment of clients. Should such a survey indicate small numbers of potential clients then the objective "to provide educational and social enrichment to youths from an insular area through contact with a diverse tourist population" should be deleted.

Objectave 4:

The evaluation report was distributed by mail to all guidance directors and vocational education departments in the state of Maine.

Results:

All of the students expressed expanded interest in occupational choices. This was reaffirmed by the school guidance department who has estimated an 85% increase in requested information about occupations related to tour guiding, such as warden services, forest service, park service, etc.

Interestingly, after their experience in the PLEASE Corps no student mentioned interest in tour guiding as a possible career choice; however, they did express increased interest in Warden, Forest, Park and Custom & Immigration services and recreation.

Thirty-three percent of the participants felt they had improved in language skills. The others expressed no improvement for reasons such as "... I've not gotten many chances to go on tours to help increase my ability to use my language towards out-of-towners" and "Most of our tourists were local people who spoke the same as we did".

Again, all of the students expressed a belief that they had increased their understanding of Maine and Canadian-American History through their workshops, research papers and field work. None felt this had led to an increased understanding of American History.

One student did not feel he had increased his understanding of recreation-conservation, 17 felt they had.

When asked if their appreciation of the natural beauty of the area had increased, one student responded, "No, I always have had it". The rest felt there had been an increase.

When asked to list things they liked about the PLEASE Corps, 77% of the students listed field trips; 66% money and meeting new people; and 22% "learning things you liked" and "working with kids my age and really accomplishing things".

Student recommendations for improving the PLEASE Corps program were as follows:

Improved tourist attractions	55%
More tourists	33%
More working hours	33%
Earlier and better publicity	22%
"Things to do when you ain't touring instead of sitting around with a sign near a road"	22%

The instructor's assessment noted that five of the participants had increased notably in their language skills and in their sense of security while speaking. He felt the rest were good or adequate in language skills prior to entering the program and had shown no change.

All of the students were reported to have increased their understanding of Maine, Canadian-American, and American History, and recreation conservation, through research papers, discussions and field trips.

The rating for skills in tour guiding broke down as follows:

1. Knowledge of background of the assigned tour area:

Very Good	4	participants
Good	8	"
Adequate	3	"
Poor	1	"

2. Presentation of tour information:

Very Good	0	participants
Good	3	"
Adequate	14	"
Poor	1	"

The research papers were rated as: 3 Very Good; 7 Good; and 18 Adequate.

RECOMMENDATIONS

The results of the program indicate its success in attaining 3 of its 4 objectives. While there was not as much demand for tour guiding as anticipated, the project did perform a service to the students and to the community. Eighteen students were gainfully employed. They became familiar with the history of the area and interested in the conservation-recreation potential of their environment. Through the program the students expanded their awareness of occupational choices. Community services were provided in the form of tours for the elderly and for children of the area, and by motivating the community and the school to assess the potential for the development of a tour guide service.

As a pilot program, Project PLEASE contained both success and failures. In order to minimize the weakness, it is recommended that:

1. An indepth assessment be made to determine the focus of tour guiding in the area, e.g., perhaps canoeing, rock collecting, bicycling tours, would be more in demand than the conventional "in the car-show them the points of interest tour".

2. Provide opportunities for trainees to interact with a wider variety of workshop participants with diverse skills and expertise.

3. Develop alternative plans for the use of participants' time and energies on days when there are few clients.

However, 3 of the 4 project objectives were met, indicating the program does have merit and should be continued and/or replicated but with modifications.

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APPENDIX I

PLEASE CORPS

Instructor's Evaluation

for

Student's Name _____

A. Through participation in the PLEASE Corps:

1. Has there been an improvement in the student's use of language?

Explain:

2. Has the student increased in his understanding of:

A. Maine History

Explain:

B. Canadian-American History

Explain:

C. American History

Explain:

3. Does the student have an increased understanding of recreation-conservation?

Explain:

B. Skill in tour guiding:

1. Knowledge of background of the assigned tour area:

Very good

Good

Adequate

Poor

Comment:

2. Presentation of tour information:

Very good

Good

Adequate

Poor

Comment:

APPENDIX II

RESEARCH PAPERS

1. Vera Labbe & Mike Corbin - Bilingual aspect of St. John Valley.

2. Audrey Gagnon & Jeff Audibert - Maine History and important facts, especially in this area.

3. Lena Corriveau & Tom Young - Canadian-American relations and history.

4. Patty Dumond & Gary Daigle - Aroostook County (History and background).

5. Mike Beaulieu & Russell Jandreau - Recreation and Conservation education.

6. Susan Ouellet & Diane Labbe - Fort Kent (Language and history) and other important facts about the area.

7. Mike Soucy & Jeff Jalbert - - Warden Services
   A. Game warden
   B. Forest warden
   C. Park warden

8. Louise Morin & David Dumond - St. John Valley history, etc.

9. Mike Jalbert & Same Jalbert - Background of Allagash

APPENDIX III

PLEASE CORPS

Student"s Evaluation

NAME _____

Please check "Yes" or "No" and write an explanation.

A. Through participation in the PLEASE Corps do you feel:

1. There has been an improvement in your use of language?

Yes _____ No _____ Explain:

2. You have increased your understanding of:

a. Maine history Yes _____ No _____

Explain:

b. Canadian-American history Yes _____ No _____

Explain:

c. American history Yes _____ No _____

Explain:

3. You have increased your understanding of recreation-conservation.

Yes _____ No _____ Explain:

4. You have a keener appreciation of the natural beauty of the area?

Yes _____ No _____ Explain:

B. Please check any you feel in appropriate.

1. Prior to entering the PLEASE Corps project were you interested in the following as possible career choices?

Tour Guiding _____
Warden Service _____
Forest Service _____
Park Service _____
Custom & Immigration Service _____
Soil Conservation _____
Recreation _____

Why?

2. After your experience in the PLEASE Corps, are you interested in the following as possible career choices?

Tour Guiding _____

Warden Service _____

Forest Service _____

Park Service _____

Custom & Immigration Service _____

Soil Conservation _____

Recreation _____

Why?

C. Please list the things you liked about the PLEASE Corps.

1.

2.

3.

4.

5.

3. Please list recommendations for improving the PLEASE Corps program.

1.

2.

3.

4.

5.

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KINNEY, EDWARD C.
COOPERATIVE FISHERY UNIT REPORT FOR THE 1969-1970 SCHOOL YEAR.

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IDENTIFIERS - WILDLIFE SERVICE

ABSTRACT - CONTAINED IS A SUMMARY OF THE ACTIVITIES AND PROJECTS UNDERTAKEN BY FISHERY UNITS IN THE VARIOUS STATES. CREATED TO FACILITATE COOPERATION BETWEEN THE FEDERAL GOVERNMENT, STATES, PRIVATE ORGANIZATIONS, AND COLLEGES AND UNIVERSITIES FOR THE PURPOSE OF DEVELOPING COOPERATIVE PROGRAMS OF RESEARCH AND EDUCATION RELATING TO FISH AND WILDLIFE, THIS DIVISION SEEKS TO INVOLVE IN ITS CONSERVATORY EFFORTS, THESE AGENCIES AS WELL AS THE STATE FISH AND GAME DEPARTMENT. NUMEROUS ACTIVITIES WERE ENGAGED IN DURING THE YEAR. SOME OF THEM WERE: (1) STAFF MEMBERS' INVOLVEMENT IN TEACHING EFFORTS (BUREAU UNIT PERSONNEL TAUGHT 44 FORMAL COURSES TO 642 STUDENTS, AND 36 RESEARCH COURSES AND SEMINARS TO 233 STUDENTS), AND (2) INVOLVEMENT IN SUPERVISORY ACTIVITIES (THEY SUPERVISED STUDENTS AT BOTH THE GRADUATE AND UNDERGRADUATE LEVELS). INCLUDED IS A LIST OF STUDENT PROJECTS AND ABSTRACTS OF COMPLETED WORK. (AUTHOR/SN)

COOPERATIVE FISHERY UNIT REPORT

FOR THE 1969-1970 SCHOOL YEAR

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

BUREAU OF SPORT FISHERIES AND WILDLIFE

DIVISION OF FISHERY SERVICES

RESOURCE PUBLICATION 90

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As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources."

The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States -- now and in the future.

Cover drawing by Craig P. Phillips, National Fisheries Center and Aquarium, Washington, D.C.

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UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

BUREAU OF SPORT FISHERIES AND WILDLIFE

COOPERATIVE FISHERY UNIT REPORT

FOR THE 1969-1970 SCHOOL YEAR

A Nation-wide Cooperative Program of Training, Investigation and Application by the Bureau of Sport Fisheries and Wildlife, State Game and Fish Departments, and Colleges and Universities.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
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DIVISION OF FISHERY SERVICES

WILLIS KING, CHIEF

Prepared by Edward C. Kinney, Chief,
Branch of Cooperative Fishery Units

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Unit students at the University of Hawaii studying the ecology of the Pokai Artificial Reef.

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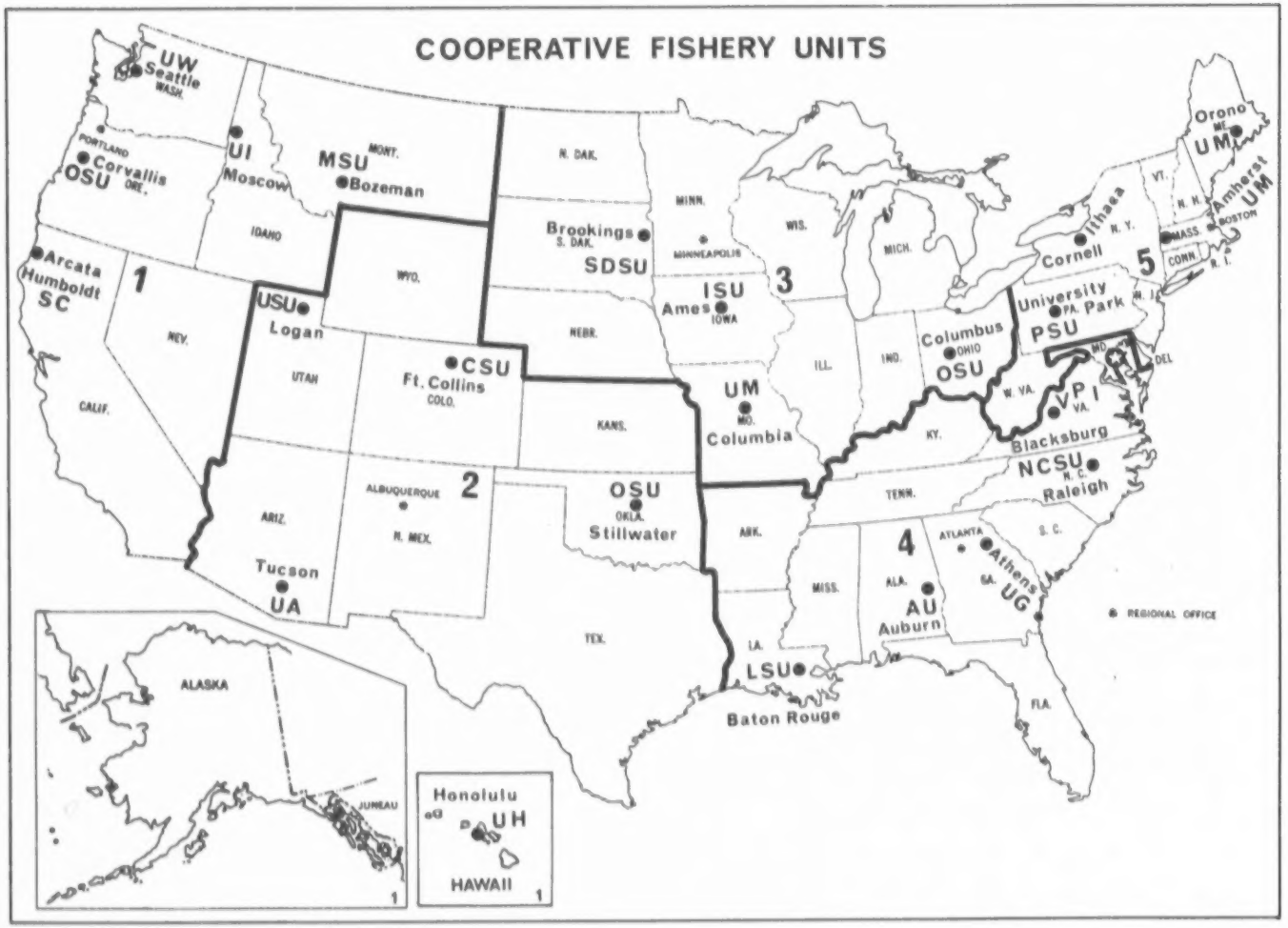

Figure 1. -- Location of regional offices and cooperative fishery units.

Cooperative Fishery Unit Report
for the Period July 1, 1969 through June 30, 1970

The Cooperative Fishery Unit program began in 1960 with the enactment of Public Law 86-686 (74 Stat. 733). The stated purpose of the Act is "To facilitate cooperation between the Federal Government, colleges and universities, the States, and private organizations for cooperative unit programs of research and education relating to fish and wildlife and for other purposes." The entire Act is reproduced in appendix C.

Each fishery unit is a cooperative undertaking involving the Bureau of Sport Fisheries and Wildlife, a college or university, and a State fish and game department. A coordinating committee, representing the participating agencies, provides general guidance to each unit. Members of the coordinating committees for each of the 23 units are given in appendix B.

During the 1969-1970 school year, there were 23 units in operation. The locations of the units are shown in figure 1. The mailing addresses of the units are given in appendix B.

During the school year, Bureau unit staff members taught 44 formal courses to 642 students and 36 research courses and seminars for 233 students. A total of 488 students were supervised including 296 undergraduates, 10 special students, 116 M.S. and 66 Ph.D. students. Degrees were awarded to 43 undergraduates and 33 graduates including 10 Ph.D's and 26 masters'. Eight of the students who received masters' degrees are working toward their doctorates. Employment of the other 35 students who received graduate degrees is as follows: 14-State fisheries, 8-Federal fisheries, 8-university teaching, 3-Canadian fisheries, and 2-private fisheries.

Bureau staff members and unit students authored or coauthored 60 scientific papers (appendix A). The list also includes 20 papers by unit cooperators and students.

The following are brief reports of the activities of the units. The reports include lists of student projects and abstracts or summaries of completed work. We regret that space was not available, in several instances, to list the cooperators' students or to include abstracts of their work.

Albino brook trout were used by Colorado Unit students to observe fish movements in a stream.

ALABAMA COOPERATIVE FISHERY UNIT

The Alabama Cooperative Fishery Unit is located at Auburn University in Auburn. Dr. John Ramsey is the Leader and Mr. James Barkuloo, the Assistant Leader.

Unit activities emphasize research on fish systematics and stream ecology. Thirty students worked toward advanced degrees, 6 supported directly by Unit projects, and 2 received the degree of M.S. The Unit Leader also instructed 32 students in his 2 ichthyology courses.

Staff projects included studies on the:

1. Systematic status of stream basses (Subgenus Micropterus) in southeastern United States
2. Movements and habitat preference of two crayfish species in a small Alabama stream
3. Propagation of paddlefish and sturgeons
4. Derivation of fishes of the southern Appalachian river systems

TABLE 1.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Gilbert, Ronald J.	*M.S.	Distribution of fishes in the central Chattahoochee River drainage
(Gilbert, Ronald J.)	Ph.D.	Ecology and systematics of the spotted bass in Alabama and adjacent areas
Hurst, Harold N.	*M.S.	Comparative life history of redeye bass and spotted bass in Halawakee Creek, Alabama
Mathur, Dilip	Ph.D.	Ecology of feeding of fishes in Halawakee Creek, Lee and Chambers counties, Alabama
Naftel, John P.	M.S.	Chromosomes of cultured cells of Alabama catostomid fish genera
Wade, C. William	M.S.	Chromosomes of some percid fishes of eastern Alabama
Wahlquist, Harold	Ph.D.	Age and growth of channel catfish in the Alabama-Tombigbee drainage systems

*Graduated

The following are abstracts of completed theses:

Ronald J. Gilbert, M.S., 1969

The Distribution of Fishes in the Central Chattahoochee River Drainage

A survey was conducted to determine fish distribution in the central Chattahoochee River drainage, a zoogeographically important but sparsely collected area. The distributions of 83 species in 19 families were recorded and plotted. The fauna was found to be sparse compared with those of adjacent systems, possibly due to Pleistocene flooding, homogeneity of habitat, infertility of the area, and physiographic isolation. The fall line was found to be less important as a barrier to fish dispersal in the Chattahoochee River than as in adjacent systems. Several range extensions and one previously unreported introduction were recorded.

Harold N. Hurst, M.S., 1969

Comparative Life History of the Redeye Bass, Micropterus coosae Hubbs and Bailey, and the Spotted Bass, Micropterus p. punctulatus (Rafinesque), in Halawakee Creek, Alabama

A comparative life history study of a syntopic population of spotted bass and Apalachicola race of redeye bass was carried out between April 1968 and May 1969. Sixty-eight specimens of each species were collected from Halawakee Creek, Lee Co., Ala. by angling, electrofishing, and rotenone application. Growth of spotted bass was greatest during the second and third years and least during the fifth year. Growth of redeye bass was greatest the first and third and least the sixth and seventh years. Growth rates of the two species were about equal. The life span of the spotted bass was short compared to that of the redeye bass. Because of its greater longevity, most of the large bass collected from the creek were redeye bass. The most important food items in the diet of both species were crayfishes and fishes. Insects were not an important source of food except for bass 100 mm standard length or less. Most individuals of both species spawned in late May and early June. At least a few redeye bass spawned in early April of both years, but there was no indication that spotted bass spawned in early April. Fecundity of spotted bass was greater than the redeye. The average 5-year-old, 1000g spotted bass female contained 22,000 eggs compared to 12,000 eggs for redeye bass females of the same age and size. Most individuals of both did not mature until the third year. The two species occurred in about equal numbers and habitat throughout the study area.

View of experimental fish ponds at Auburn University, location of the Alabama Cooperative Fishery Unit.

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ARIZONA COOPERATIVE FISHERY UNIT

The Arizona Cooperative Fishery Unit is located at the University of Arizona in Tucson. Its Leader is Dr. William J. McConnell and the Assistant, Mr. Charles D. Ziebell.

The Unit had 4 graduate students during the year. Unit staff taught 3 formal courses with a total enrollment of 36 students.

Unit programs focus on investigation of environmental factors related to fishing quality, reuse of wastewater, and fish life histories as they pertain to specific management problems. The Leader continued his studies on the effect of litter phenolics on aquatic animals. The Assistant continued studies of catfish ecology at Parker Canyon Lake and biological weed control evaluation using Tilapia zillii and grass carp.

TABLE 2.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Greer, Edwin	M.S.	Biological precipitation of phosphate from wastewater
Hallock, Robert	Ph.D.	Role of emergent vegetation in the ecology of fish of Imperial Reservoir
Trapnell, Fred	Ph.D.	Distribution of invertebrates in Imperial Reservoir
Weaver, Ronald	M.S.	Distribution and food habits of juvenile fish in Imperial Reservoir

Graduate students Hallock and Weaver, Arizona Unit, checking fish distribution in Imperial Reservoir, lower Colorado River.

CALIFORNIA COOPERATIVE FISHERY UNIT

Humboldt State College in Arcata is the site of the California Cooperative Fishery Unit. The Leader, Dr. Roger A. Barnhart, and the Assistant Leader, Dr. Charles F. Bryan, have been with the Unit since 1967.

Unit research focuses on the ecology of northern California coastal streams and on estuarine and coastal marine biology. Dr. Barnhart continued a cooperative project with the U.S. Forest Service including methods of providing fish passage at road culverts. Dr. Bryan's work included preparation of a partial bibliography and reference slides of the early life histories of selected fish in Humboldt Bay. He began bioassays of oil dispersants on shiner perch by electrophoresis analyses of blood sera.

Nine of 11 graduate students advised by the staff in fisheries received financial support from the Unit. Two of them attained the degree of M.S. The Unit Leader and Assistant taught a total of 6 courses with an enrollment of 70 students.

TABLE 3.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Bureau Staff advised:		
Apperson, C.	M.S.	Changes in occurrence and abundance of benthos in Hat Creek
Barnes, J.	M.S.	Effects of logging activity on salmonid production in a small stream
Bickler, M.	M.S.	Culture of the Dungeness Crab
Brauer, C.	M.S.	Life history of the western sucker in Hat Creek
Cross, P.	M.S.	Factors affecting salmonid production in a small coastal stream
DeMont, D.	M.S.	Effects of certain physical parameters upon electrofishing
Eldridge, M.	*M.S.	Distribution and relative abundance of larval fishes in Humboldt Bay
Lambert, T.	M.S.	Invertebrates colonizing an artificial reef
Melone, F.	M.S.	Effect of sublethal pollution on the blood serum of shiner perch
Misitano, D.	M.S.	Early life history of the English sole in Humboldt Bay
Sunada, J.	*M.S.	Life history and culture of the Japanese ayu

*Graduated

The following are abstracts of completed theses:

Maxwell B. Eldridge, M.S., 1970

A Larval Fish Survey of Humboldt Bay

Oblique tows and special sled tows were made from December 1968 to January 1969. Of the 9,759 larvae collected, 22 were identified to species, 2 only to genus, and 16 to family. An unidentified goby and Pacific herring were the most abundant species. Illustrations and descriptions of 14 larvae are presented. The majority of the 40 species collected originated from demersal eggs and were resident inshore species characteristic of Pacific coast estuaries. The most productive sampling station was located in North Bay in contrast to the stations near the Bay entrance. The lowest number of species was found at a site which experienced large discharges of freshwater. The majority of the numbers and species was collected from January to May; June to November were low

in productivity. December brought about an increase in species number due to offshore pelagically spawned larvae. Strong vertical mixing, sampling error and species behavior are discussed with regard to apparent homogeneous vertical distribution. Increasing pollution and habitat modification necessitates full understanding of the ecology of the Bay. This study indicates that Humboldt Bay is utilized as a breeding and nursery ground for at least 40 species of fish.

John S. Sunada, M.S., 1970

Life History and Culture Techniques of the Japanese Ayu, Plecoglossus altivelis

Several aspects of the life history of the Japanese ayu (Plecoglossus altivelis) were studied. The ayu eggs arrived from Japan on October 31, 1968, and were cultured at the College hatchery. One of the major problems in culturing ayu larvae is providing adequate diet feeding. In the first month, 93 percent of the larvae died. The fish is carnivorous during its larval and juvenile stages and becomes herbivorous during its adult stages. Signs of the transformation appeared in mid-March. Growth studies were conducted in different environments. Results indicated that ayu grew better in an outdoor circular pond, while growth rates in an indoor trough and aquarium were equal. Mean specific growth rates in the aquarium and in the outdoor pond were 0.85 and 1.03, respectively. Competition between the ayu and 2 salmonids, the rainbow trout and the silver salmon, was studied. Trout held with ayu had a faster specific growth rate in weight (2.90) while the growth of the ayu in competition with trout was slowest with a mean specific growth rate of 0.39. An F-test indicated a significant difference in the mean final lengths of the control and experimental groups of ayu and trout. A similar test was conducted with silver salmon and ayu which indicated that salmon competing with ayu displayed a greater, but not significantly greater, specific growth rate than ayu. In both studies, the salmonids appeared to be the dominant species; their growth rates appeared not to be affected by the presence of ayu.

The Sea Gull, Humboldt State College research ship.

California Unit student, Dave Cross, collecting data on steelhead trout from Singley Creek.

COLORADO COOPERATIVE FISHERY UNIT

The Colorado Cooperative Fishery Unit is located at Colorado State University in Fort Collins. Dr. Robert E. Vincent served as Leader from the Unit's inception in March 1963 until his resignation in December 1969. His successor, Dr. William J. McConnell, assumes duties in August 1970. Dr. Robert J. Behnke has served as Assistant Leader since September 1966.

Unit programs focus on stream ecology and fish systematics. Eleven students worked toward degrees during 1969-1970 and 5 received the Ph.D. The Leader and Assistant taught 4 courses with a total enrollment of 18 students.

The Unit Leader spent most of his time in planning and directing graduate student projects. He also continued studies on the seasonal movement of fishes in a 1/4-mile section of a small Colorado stream.

The Assistant Leader continued work on the inventory and systematics of fishes of the Rocky Mountains with emphasis on species relationships of the genus Salmo. He also served as consultant to and participant in several State and Federal activities on fisheries in the Rocky Mountains area.

TABLE 4.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Bureau Staff advised:		
Andrews, Austin K.	*Ph.D.	Life history of the fathead minnow
DeLong, Richard A.	Ph.D.	Serum protein polymorphism in some salmonid fishes
Flickinger, Stephen A.	*Ph.D.	Fathead minnow culture
Gregory, Richard W.	*Ph.D.	Chemical properties of walleye sperm
Horak, Donald L.	*Ph.D.	Stamina of hatchery-reared rainbow trout
Middleton, William H.	Ph.D.	Systems analysis of stream velocity, silt load, channel morphology, and bottom types as related to biomass, standing crop, and the sport fishery in streams
Peters, John	Ph.D.	Changes in fish populations and sediment yields by erosion control
Schreck, Carl B.	Ph.D.	Attempted sex reversal of the fathead minnow
Stewart, Phillip A.	*Ph.D.	Physical factors influencing trout density in a small stream
Wernsman, Gary R.	M.S.	The native cutthroat trout of Colorado
Unit Cooperator advised:		
Saylor, Michael L.	M.S.	Culture of fishes with commercial importance

*Graduated

The following are abstracts of completed theses:

Austin K. Andrews, Ph.D., 1970

The Distribution and Life History of the Fathead Minnow (Pimephales promelas Rafinesque) in Colorado

This investigation emphasized lotic and lentic distribution and the life history of the fathead minnow in two different environments in Colorado. Lotic distribution is confined to waters below elevation 2,135 m. Lentic distribution has been primarily

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determined by introductions. Life history was studied in two lentic ecotypes, a warmwater environment located at elevation 1,502 m and a coldwater environment located at elevation 2,464 m. Fathead minnows spawned in late May or early June in both populations. Nest site characteristics, intraspecific competition for spawning sites, sporadic spawning behavior, and early development of larvae did not differ from published reports. Incubation time was determined for the range of water temperatures present in the study environments. Growth rates did not differ significantly between the warmwater and coldwater populations. Life span for this species was 2 to 3 years. Adults of age class II were lost to the population after spawning. Food habits varied with time of year. In May, spawning adults ingested mainly animal materials but between June and September they ingested increasing percentages of plant materials. The only two critical habitat requirements of fathead minnows were water velocities less than 15 cm/sec and copious growths of aquatic vegetation. Indications of the success of fathead minnows in establishing populations when introduced into new, diverse habitats were seen in the cold-water distribution. Most important indicators were: (1) a viable population in a lake at elevation 3,034 m, a new altitude record for the species and probably for the family CYPRINIDAE in North America; (2) successful spawning initiated at a water temperature of 12.8 C, approximately 3 C lower than previously reported temperatures; and (3) an opportunistic and omnivorous diet consisting of both animal and plant material.

Stephen A. Flickinger, Ph.D., 1969

Increasing Fathead Minnow Production Through Population Manipulation

The two major areas of emphasis were reproduction, and growth and survival of the fathead minnow, Pimephales promelas Rafinesque. The optimum combination of brood-fish population density and sex ratio was 19,200 fish per surface acre and 5 females to 1 male. Fingerling production from this combination was predicted to be 1,524,500. Post spawning mortality of adults ranged from 20 percent to 91 percent with higher survival of females than males. Fathead minnows utilized spawning boards placed up to 5 ft. deep, and they also utilized boards placed without reference to the substrate. Larger nest sites encouraged larger egg deposits. Nests were crowded together as effectively by restricting available nest sites as by providing visual isolation or territorial markings. Initial size of fingerlings, time of stocking, and population density regulated growth of the fish. Maximum standing crop was 255,600 fish per surface acre weighing 1,011 pounds, and only 2 percent of those fish were sub-salable initially, shifting toward larger fish until few or no fish were sub-salable, a small percentage was large, and approximately equal numbers were small and medium. Skimming salable sized fathead minnows at densities below carrying capacity did not alter growth rate of the remaining fish. Over-winter survival of adult fathead minnows averaged 97 percent, while over-winter survival of fingerlings averaged only 41 percent.

Richard W. Gregory, Ph.D., 1969

Physical and Chemical Properties of Walleye Pike
Stizostedion vitreum vitreum (Mitchill), Sperm and Seminal Plasma

Semen was collected from 33 sexually mature walleye pike males captured by gill net in 3 northeastern Colorado reservoirs. Physical and chemical measurements were made on each individual sample of semen. The physical properties measured and the mean values of each were: length (of fish) - 555.3 mm; weight (of fish) - 1,694.6 gm; spermatrocrit (percentage of packed cells to total volume) - 55.2 percent; freezing point depression ($\triangle^{\circ}$) - 0.489; dry weight as percentage of wet weight - 20.8 percent, and ash weight as precentage of dry weight - 11.3 percent. Chemical analyses were run on individual samples of seminal plasma to determine pre and post-freezing levels of certain constituents and to measure changes which occur following freezing. The values obtained in mg/100 ml were: Ca - 3.2 to 1.5; Cl - 467.5 to 427.9; Mg - 1.6 to 4.7;

P - 5.3 to 51.9; K - 97.0 to 156.8; Na 383.3 to 241.6; total protein - 2.6 to 5.9; urea N - 2.9 to 8.1; and uric acid - 3.3 to 11.1, respectively, for pre- and post-freezing levels. These properties were also measured in frozen sperm cell cytoplasm and results are in mg/gm packed sperm cells. In addition, a simple linear regression analysis was conducted on all variables measured. Chemical properties of fresh walleye seminal plasma are compared to values obtained by other authors for Atlantic salmon, human, bull, fowl, and dog seminal plasma.

Donald L. Horak, Ph.D., 1970

Stamina and Survival of Hatchery-Reared Rainbow Trout

Physical stamina was measured for hatchery-reared rainbow trout by determining the length of time each fish could withstand forced-sustained swimming in a specially constructed stamina tunnel. We hypothesized that a high-stamina index was indicative of a high-survival potential. Stamina-indexed rainbow trout were stocked into two lentic and two lotic environments in Colorado during the summers of 1966-69. During field sampling, significant differences were demonstrated only twice between the returns of rainbow trout indexed as high or low stamina. No conclusive evidence was found that a high-stamina index was indicative of a better survival. Stamina-indexed rainbow trout exhibited no difference in length, weight, condition factor, and susceptibility to angling. Improved swimming ability was demonstrated upon retesting in the stamina tunnel. Additional studies are advised to conclusively determine the merit of stamina tunnel evaluations for predicting survival potential.

Phillip A. Stewart, Ph.D., 1970

Physical Factors Influencing Trout Density in a Small Stream

A two phase study was conducted in a small trout stream in north central Colorado. In Phase I we examined the relationships of 15 physical variables with density of wild brook trout (Salvelinus fontinalis) and rainbow trout (Salmo gairdneri) in stream sections. In Phase II we studied the reaction of frightened wild rainbow trout to different cover structures. Variables in the structures were height above and below the water surface, percentage of surface area perforated, and water depths. Variables, in order of their importance to density of brook and rainbow trouts were mean section depth and underwater, overhanging rock cover. Undercut banks and areas of deep turbulent water seemed to be of some importance to brook trout density, but not rainbow trout density. No other variables could be shown to be statistically important to density of either species. Rainbow trout use of experimental fright cover devices increased with increasing structure size, decreasing structure height, and decreasing percentage holes. No effect of two water depths was found. The variables height, size, and percentage holes affected light intensity under structures as well as fish use. Fish use of structures was strongly related to light intensity under structures. Small sized rock cover, found to be important to trout density in Phase I, may increase density by increasing visual isolation of fish, rather than functioning as fright cover. Additional experiments in Phase II indicate that deep water areas can function as fright cover. Mean depth in Phase I may be important in determining trout density in that it reflects the presence of deep water areas.

GEORGIA COOPERATIVE FISHERY UNIT

The Bureau's Cooperative Fishery Unit in Georgia is at the University of Georgia in Athens. Dr. Alfred C. Fox is the Unit Leader and Mr. James P. Clugston, the Assistant Leader.

Unit research covers management problems in ponds, streams and reservoirs. The Leader continued studies on the growth rate, mortality, and catchability of 3 species of catfish at Fort Gordon. Mr. Clugston conducted fish population surveys in an artificially heated lake as part of studies of the effects of thermal alterations on the reproduction of selected centrarchids.

The Unit supported 5 students in 1969-1970. Six of the 15 Unit students were advised by the Unit Leader. Thirty-seven students enrolled in 3 courses taught by the Leader.

TABLE 5. -- Unit students, degrees sought, and project subjects

Student	Degree	Subject
Bureau Staff advised:		
Davis, Steven M.	M.S.	Seasonal changes in stream temperature and fauna below a dam with bottom discharge
Duever, Michael	Ph.D.	Mineral cycling in a small reservoir as affected by epilimnial and hypolimnial discharge
Fatora, Richard	Ph.D.	Evaluation of trout habitat manipulation
Holbrook, J.	Ph.D.	The effect of selected environmental variables on fish distribution in a lake
Primer, Kim W.	M.S.	Food habitats of channel catfish
Rawson, Mac V.	Ph.D.	Population dynamics of parasites on two species of estuarine fishes
Unit Cooperator advised:		
Bailey, Richard	Ph.D.	Effects of sublethal concentrations of DDT on schooling behavior of channel catfish
Barnett, Craig	M.S.	Life history of Notropis sp.
Harris, Fred	M.S.	Effects of thermal enrichment on a sport fishery
Martin, George T.	*M.S.	The commercial shrimp fishery of McIntosh County, Georgia
O'Rear, Robert S.	M.S.	An age-growth study of largemouth bass in a thermally polluted lake
Pierce, Larry	M.S.	Trap response of young channel catfish and brown bullhead
Rees, Robert	M.S.	Early life history of striped bass.
Sandow, Jack T.	M.S.	A comparison of population sampling results with the total fish population of a 90-acre Georgia reservoir
Street, Michael W.	*M.S.	Some aspects of the life histories of hickory shad and blueback herring in the Altamaha River, Georgia

Abstracts of completed theses:

George T. Martin, M.S., 1970

The Commercial Shrimp Fishery of McIntosh County, Georgia

The records of 20 vessels operating in McIntosh County were examined in order to determine the relative abundance of 3 groups of penaeid shrimps (2 species) from 1962 through 1967. Graphical and statistical analyses of the data revealed that the combined effect of low temperatures and high streamflows during the winter months were usually associated with low catches of white shrimp (both groups) and high catches of brown shrimp. The relation between annual relative abundance of shrimps and air temperature and streamflow was defined by prediction equation constants. The lenth of harsh winter conditions appeared to be associated most strongly with the population size of P. setiferus, and brief periods of low spring temperatures and low streamflow were followed with higher catches of young-of-the-year white shrimps than periods of prolonged spring low temperature and high streamflow. According to the results of the stepwise regression technique, temperature alone was more related to "white-1" shrimp abundance whereas temperature and stream flow were related to "white-1" and brown shrimp abundance. The fecundity of overwintered white shrimps was important in supplying the variable crop of young-of-the-year white shrimp in most of the years from 1962 through 1967. The relationship of the abundance of the two groups was best shown by logarithmic plots of Catch-Per-Day-Fished and by published Liberty-McIntosh County landings.

Michael W. Street, M.S., 1970

Some Aspects of the Life Histories of Hickory Shad, Alosa mediocris (Mitchill) and Blueback Herring, Alosa aestivalis (Mitchill) in the Altamaha River, Georgia

Several aspects of the life histories of hickory shad, Alosa mediocris (Mitchill), and blueback herring, Alosa aestivalis (Mitchill), were investigated in the Altamaha River, Georgia, from July 1, 1968 to July 31, 1969. Fecundity of both species was determined from samples obtained during the winter-spring spawning migration up the Altamaha River. Mean fecundity of hickory shad was about 500,000 while that of blueback herring was approximately 244,000. Collections of eggs and larvae indicated that hickory shad spawned in the lakes and larger tributaries of the Altamaha from tidal water (about mile 20) to the head of the river (mile 137). Collections of spawning adults and larvae showed that blueback herring spawned in the smaller tributaries and flooded swamps off the main river channel between river miles 100 and 120. Hickory shad appeared to spawn from mid-March through late May while the spawning of blueback herring seemed limited to a period of about 3 weeks from late March to mid-April. Juvenile hickory shad obtained between June and December grew from 40 mm to 140mm in length. Blueback herring juveniles increased in length from 29 mm to 65 mm in the same period. Juvenile hickory shad moved out of the Altamaha River proper during early summer and utilized the shallow marine area outside the river as a nursery area. Juvenile blueback herring moved into the brackish estuary in early June, then back upstream to tidal fresh water (mile 11-30) beginning in late June. This tidal fresh water area served as the primary nursery area for blueback herring until they left the river in late October following a sharp drop in water temperature.

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HAWAII COOPERATIVE FISHERY UNIT

The Hawaii Cooperative Fishery Unit at the University of Hawaii in Honolulu emphasizes a program of field research in marine inshore and inland water. Dr. John A. Maciolek has been the leader since the founding of the Unit in February 1966. The position of Assistant leader remains unfilled.

Seven graduate students worked toward degrees through the Unit and one received a Ph.D. Twenty students enrolled in two courses given by the Unit leader.

Dr. Maciolek continued monographic studies of freshwater gobies, including life histories of four of the five endemic species, and studies of mixohaline and freshwater crustaceans. He also served as principal investigator on two contract studies: ecology of artificial reefs and diadromous fauna in Hawaii.

TABLE 6.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Dunn, Darnelle	**M.S.	Chemical aspects of a stream-estuary system
Kubota, Wilbert	M.S.	Diadromous endemic stream fauna
McVey, James	Ph.D.	Fishery ecology of an artificial reef
Nakano, Rodney	M.S.	Limnology of a mixohaline limnocrene
Olsen, David	Ph.D.	Ecological evaluation of abalone introduction
Swerdloff, Stanley	*Ph.D.	Comparative biology of two damselfish species
Timbol, Amadeo	Ph.D.	Ecology of Kahana Estuary

*Graduated
**in absentia

Stanley N. Swerdloff, Ph.D., 1970

Comparative Biology of Two Hawaiian Species of the Damselfish Genus, Chromis (Pomacentridae)

Two coexisting endemic chromids Chromis ovalis and C. verater were investigated to describe and compare embryology, functional anatomy, behavior, and elements of their respective niches. Over 1,300 specimens of these ubiquitous reef fishes were taken from seven Oahu study areas by spear and rotenone. Collections and concurrent observations required 350 hours of SCUBA diving to depths of 40m. Embryos and larvae were obtained by incubating naturally spawned and artificially fertilized eggs. Adult diets and food preferences were compared using the Kendall Coefficient of Concordance and Test of Electivity. Principal similarities between the species were: shelter, activity and feeding habits (mid-water planktivores in strong daylight); diet (copepods dominant, tunicates selected); growth; adult size (12 cm); general breeding habits (spawn in late winter on hard substrates, only males prepare and guard nest). Differences were noted in fecundity, length of spawning season, juvenile size and age at recruitment, and extreme limits of vertical distribution (overlap between 7 and 40m). There was no evidence of critical competition between intermingling populations. Common resources (food, shelter, spawning sites) appeared non-limited, allowing coexistence. Pelagic larval mortalities may maintain adult densities below critical levels.

IDAHO COOPERATIVE FISHERY UNIT

The Idaho Cooperative Fishery Unit, located at the University of Idaho at Moscow, has a program emphasizing salmonid ecology, pollution effects on fish populations, and socio-economics of fishery management. Dr. Donald W. Chapman is the Unit leader and Dr. Theodore C. Bjornn, the Assistant leader.

Unit staff presented three courses with a total enrollment of 52 students. Together they advised 15 of 18 Unit graduate students, four of whom received advanced degrees. Staff research is closely related to student projects.

TABLE 7.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Bureau Staff advised:		
Ball, Kent	M.S.	Catch-and-release regulations for cutthroat trout
Bowler, Bert	M.S.	Directed movements of newly emerged cutthroat fry
Dudley, Richard	Ph.D.	Biology of Tilapia in the Kafue Flats, Zambia
Gibson, Harry	*M.S.	Zectran effects on aquatic animals
Goodnight, William	*M.S.	Fish production in Big Springs Creek
Gordon, Douglas	*Ph.D.	Socio-economics of Idaho fisheries
Griffith, John	Ph.D.	Interaction of brook trout
Johnson, Carl	M.S.	(To be determined)
Johnson, Dave	M.S.	(To be determined)
Keating, Jim	*M.S.	Smallmouth bass biology
Mauser, Gregg	M.S.	Cutthroat trout movements
Miller, William	Ph.D.	Movements of juvenile chinook salmon
Morrill, Charles	M.S.	Holding capacity of habitat for steelhead
Rankel, Gary	M.S.	Life history of St. Joe cutthroat trout
Scully, Richard	M.S.	Ecology of fishes in the Kafue Flats, Zambia
Unit Cooperator advised:		
Daily, M.K.	M.S.	Avoidance behavior of steelhead trout exposed to Kraft effluent
Reid, George	M.S.	Life history of squawfish in the St. Joe River
Ringe, Rudy	M.S.	Studies of pollution effect on adult steelhead

*Graduated

The following are abstracts of completed theses:

Harry Raymond Gibson, M.S., 1970

Effects of Zectran Insecticide on Aquatic Organisms in Bear Valley Creek, Idaho

The insecticide Zectran, sprayed on the Bear Creek Valley watershed in 1966 did not significantly increase the mortality, emigration, and intrastream movement; or alter the growth rate and condition of 0+ to 3+ dolly varden, Salvelinus malma. Numbers of benthic aquatic insects also did not change, but more terrestrial and aquatic insects drifted downstream for several hours commencing 3 hours after spraying.

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William Harold Goodnight, M.S., 1970

Fish Production in Two Streams in Idaho

Annual fish production was estimated for two Salmon River tributaries, Big Springs Creek and Lemhi River, expressed as grams of fish tissue per m^2 of stream bottom. Production in Big Springs Creek reached 11.8g/m^2/year with 88 percent contributed by rainbow trout, Salmo gairdneri. This species contribution to production closely paralleled its contribution to the total standing crop of fish in the stream. In the Lemhi River, production was 13.6 g/m^2/year with whitefish, Prosopium williamsoni contributing 52 percent.

Douglas Gordon, Ph.D., 1970

A Socio-Economic Analysis of Idaho Sport Fisheries

In 1968, a questionnaire survey was made to assess: (1) gross annual expenditures associated with Idaho sport fisheries, (2) the net value of various high quality sport fishery resources and (3) the distribution of fishing effort within Idaho by resident and nonresident anglers. Returns from 9,317 questionnaires sent to resident and nonresident anglers over a 12 month period were 45.1 percent usable forms.

In a supplement study questionnaires were distributed to resident and nonresident anglers to ascertain their preferences, opinions, and behavior of anglers utilizing Idaho sport fishery resources in 1967. Returns from 10,014 questionnaires were 57.4 percent usable forms.

Resident Idaho anglers spent an estimated $8,488,000 on durable equipment items used for fishing. Resident and nonresident anglers spent an estimated additional $11,086,000 within State boundaries on transfer costs associated with fishing trips. The gross expenditures of Idaho anglers, including license fees of $1,429,000 totaled $21,000,000.

Fishermen spent an estimated 2,939,000 angling days in Idaho in 1968. Fishing pressure was relatively evenly distributed ranging from 14 to 23 percent of the total days fished among fishery management areas, but 60 percent of the total transfer costs were spent in two areas with high quality fisheries.

Resident anglers accounted for 60 percent of the total license sales, 42 percent of the transfer cost expenditures, and 77 percent of the total days fished. Nonresident anglers bought 40 percent of the licenses, spent 58 percent of the transfer costs, but accounted for only 23 percent of the days fished. Resident anglers fished an average of 12 days, and spent an estimated $2.04 per day. Nonresidents averaged 5 days fishing in Idaho and spent $9.67 per day.

Eight Idaho sport fisheries which specifically attracted many anglers had an estimated net annual economic value of $4,650,000. Consumer surplus for the eight fisheries, or the net annual benefit now realized by anglers under present nonmarket conditions, was an estimated $9,435,000. Using the calculated net economic value and the standard national water project interest rate of 4 $\frac{3}{4}$ percent, we estimated the capitalized value of the eight fisheries to be about $100,000,000. Since the eight fisheries accounted for only 1,320,000 of 2,939,000 angling days in Idaho, estimated net economic, consumer surplus, and capitalized values must be considered minimal.

A majority of anglers, particularly nonresidents, preferred to catch a moderate number of medium sized fish rather than many small ones or a few large ones. A significant majority (80%) of the respondents expressed satisfaction with present Idaho creel limits.

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Approximately two-thirds of all respondents fished in streams for trout, and over one-half fished in lakes for salmonids. Participation in the other fishery segments ranged from 10 to 20% of the anglers sampled.

A majority of anglers preferred to see pre-smolt steelhead protected in rearing areas rather than accept losses due to angling. They were equally divided in a choice between a restricted catch of "native" trout and the supplemental stocking of hatchery fish. The majority of anglers who expressed an opinion thought fishing-for-fun (catch-and-release) programs a worthwhile idea and indicated they would try it.

A large body of the angling public indicated they would pay more to maintain or improve specific sport fisheries in Idaho. Many respondents, even though they did not personally participate in a fishery, indicated they would pay more to help support that particular resource. The majority of respondents, both resident and nonresident, expressed satisfaction with present Idaho nonresident license fees. More respondents would like to see greater emphasis placed on hatchery fish production than on rough fish control. Anglers assigned relatively low priorities to public access and reservoir construction for fishing.

Most respondents, who expressed an opinion were satisfied with the quality of hatchery fish. Anglers wanted the size of hatchery fish increased more than any other aspect listed. If restrictions are necessary to limit the harvest of fish from a particular body of water, a significant majority of respondents prefer to see creel limits reduced rather than shorter seasons or restricted methods. Approximately 75% of the respondents used bait, slightly more than half used lures, and less than half used flies while fishing in Idaho.

The angler of the future will likely accept the concept of paying more for his fisheries recreation; assign high priorities to hatchery fish production, rough fish control, research and evaluation; and approve of fishing-for-fun programs.

James F. Keating Jr., M.S., 1970

Growth Rates and Food Habits of Smallmouth Bass in the Snake, Clearwater and Salmon Rivers, Idaho 1965-1967

From 1965 to 1967 smallmouth bass were collected in sections of several major rivers of central Idaho to compare their growth rates in local waters of dissimilar environmental characteristics and to establish the prospects for continued survival of these bass populations in proposed impoundments if expected lowered summer water temperatures prevail. Back calculation of the length of bass at scale annuli provided estimates of growth increments.

Smallmouth bass from the study areas of the Snake, Clearwater, and Salmon River grew more slowly than smallmouth bass in other locations throughout North America reported in literature. Their growth rate was 85 mm the first year and 60 mm in the next two years.

Bass from the warmer, more fertile upper Snake River grew slightly faster than those in the lower Snake River, the Clearwater River and the Salmon River in their first three years of life, but bass from the latter sections grew faster in older age classes and all populations reached nearly the same size, approximately 300 mm total length, by the end of their sixth year. Bass over 6-years old grew at reduced rates of 12 to 20 mm a year through age class nine. Crowded and indistinct annuli prevented an accurate determination of age from scales with more than eight or nine annuli. Lunker bass, 381 to 521 mm long, had from 10 to 15 annuli. Growth increments of bass did not vary with normal, minor fluctuations in the annual sums of degree days over 10 C in three growth-temperature comparisons. Other environmental factors such as inter-or intra-specific competition, apparently overrides any benefits that occur in these river sections in warmer years.

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Annual thermal sums of the Clearwater River approach minimum sums of waters listed by Coble (1967) in his thorough review of smallmouth bass growth and temperature correlations in North America. A reduction of only 2 C in daily water temperature of the Clearwater River by flow regulation at dams during four summer months would reduce the annual thermal sum from 1,000 to below 800 degree days and could adversely affect bass growth and survival. Coble (1967) does not list any bass populations in waters with less than 848 degree days.

Smallmouth bass in the Snake River feed predominately on crayfish while those in the Clearwater River and Salmon River rely heavily on fish and to a lesser degree on insects. Crayfish are abundant in the Snake River and scarce in the Clearwater and Salmon Rivers.

A study of ecological interrelationships is needed to explain why smallmouth bass in the 50% warmer, more fertile, and all around "better" appearing bass habitat of the Snake River do not grow faster than bass in the "poor" habitat of the Clearwater River.

Idaho Unit student, Bill Miller, making a limnological study on the Kafue River, Zambia, Africa.

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IOWA COOPERATIVE FISHERY UNIT

The Iowa Cooperative Fishery Unit is located at Iowa State University in Ames. Dr. Robert J. Muncy has been the Unit Leader from the start of the Unit in April 1966. The Assistant Leader, Dr. Ross V. Bulkley, joined the Unit in September 1966. University employees who serve as Unit faculty members include Drs. Roger W. Bachman, Kenneth D. Carlander and Robert B. Moorman. Other University faculty members serve as graduate committee members.

Unit studies are directed toward understanding factors affecting changes in species, size and age composition of aquatic population in ponds, lakes, reservoirs and streams.

Unit staff members taught 13 courses during the year. Total attendance included 248 undergraduates, 1 special student and 122 graduates. Included in the above were 2 formal courses (Zoology 563, Fish Propagation; and Zoology 662, Fisheries Techniques) taught by the Unit Leader and Assistant Leader to 25 students.

The Unit had 22 graduate students during the schoolyear. Degrees were awarded to 4 M.S. students and 1 Ph.D. student (table 8).

The Unit Leader directed a 2-year research project on the effects of stream channelization on fish and bottom fauna in the Little Sioux River. He is also evaluating the use of prima cord, an explosive, as a fish sampling tool in streams.

The Assistant Leader investigated the incidence of furunculosis in Clear Lake fishes following a epizootic in yellow bass. Research was initiated on the effects of anabolic steroids on the growth of channel catfish.

TABLE 8.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Bureau Staff advised:		
Bowser, Paul L.	M.S.	Columnaris disease in Clear Lake fishes
Dennison, Samuel G.	M.S.	Reproductive potential of black bullhead
Hansen, Douglas R.	M.S.	Effects of stream channelization
Jernejcic, Frank A.	*M.S.	Prey selectivity of walleye
McWilliams, Richard	M.S.	Effects of anabolic steroids on channel catfish growth
Rasnak, Charles R.	M.S.	(Dropped fisheries May 1970)
Schacht, Robert	M.S.	Effects of ammonia on fish respiration
Schwartz, Joseph	M.S.	Incidence of furunculosis
Unit Cooperator advised:		
Asafo, Charles	M.S.	Yellow perch life history in Oahe Reservoir South Dakota
Boonyavonich, Savong	M.S.	
Carter, Frances	*M.S.	Productivity of secondary producers
Carter, Neil E.	Ph.D.	Fish production, yield and standing crops
Coon, Davud N,	M.S.	Fisheries survey of Skunk River
Denniston, Judith W.	M.S.	Surface area-chironomid relationships in tertiary ponds
Grover, John H.	*Ph.D.	Feasibility of cold water fish in Lake Sharpe, South Dakota
Jones, John R.	M.S.	Limnology of Skunk River

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Kilkus, Stephen	M.S.	Water quality of central Iowa streams and lakes
LaPerriere, Jacqueline	M.S.	Limiting plant nutrients in Des Moines River
Nasiri, Sufian K.	*M.S.	Life history of Lake LaVerne goldfish
Pelren, Douglas	*M.S.	Growth of tilapia in Iowa ponds
Provost, Helen D.	M.S.	Chironomid larva production in tertiary ponds
Sable, Daniel	Ph.D.	Use of RNA-DNA to evaluate fish growth
Williford, Ernest J.	M.S.	Effects of surface area on limnology of tertiary ponds

*Graduated

The following are abstracts of completed theses:

Frances A. Carter, M.S., 1969

Growth of a Secondary Producer (Glyptotendipes barbipes) in Tertiary Treatment Ponds

Samples of chironomid larvae from four tertiary ponds at Ames were separated into respective instars on basis of distance between the eyes and length of head capsule. Seasonal changes as well as measurement differences between instars were statistically analyzed. Length-weight regression lines were compared between instars.

John H. Grover, Ph.D., 1969

Feasibility of Introducing Coldwater Fish into Lake Sharpe, South Dakota

Lake Sharpe, the newest main stem Missouri River reservoir, was evaluated for possible introduction of coldwater fish. Data from 1966-68 indicated summer maximum water temperature of 19 C and only once was dissolved oxygen below 6.8 mg/1. Forty-two fish species were present and gizzard shad and yellow perch were the most abundant young-of-the-year fishes for 1968. Walleye were the most abundant adult fish in 1968 gill net catches. Standing crops of benthic invertebrates were estimated at 1.15 g wet weight/m^2 and zooplankton at 3.6 kg dry weight/ha. Literature on temperature and other requirements of nine coldwater fish species was reviewed. Lake Sharpe temperature conditions would favor more temperature-tolerant types like rainbow trout, brown trout and coho salmon. Salmonids would have to compete with existing fish populations. As suitable spawning sites are lacking in the reservoir, a put-and-take stocking program would be necessary.

Frank A. Jernejcic, M.S., 1969

Prey Selectivity of Clear Lake Walleye

Stomach contents of 187 walleye were examined and compared with prey selectivity of walleye in tanks offered young-of-the-year black bullheads, yellow perch, spottail shiners, and yellow bass. Electivity indices comparing numbers of species found in walleye stomachs with numbers in seining collections from Clear Lake revealed strong selectivity for yearling bullheads and young-of-the-year bluegills. Adult spottail shiners and young-of-the-year bullheads were significantly scarce in walleye stomachs but yellow perch were proportionately selected. Walleye in tanks selected young spottail shiners, yellow bass, yellow perch and bullheads, respectively.

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Sufian K. Nasiri, M.S., 1969

Life History of Goldfish, Carassius auratus L., in Lake LaVerne, Ames

Limnological observations were taken weekly from June through August 1968, on 2.82-acre Lake LaVerne on I.S.U. campus. Potamogeton sp. and Eleocharis sp. were only rooted vegetation in the lake. Fifteen genera of algae were identified. Potamogeton and algae made up main diet of the goldfish. Goldfish population was estimated at 37,678 in September 1968. Length-weight relationship was represented by equation Log W=2.799 Log L - 3.964, and average condition factor (K) of 4.58. Examination of scales indicated age groups I, 0, II respectively, were most abundant.

Douglas W. Pelren, M.S., 1969

Growth of Tilapia aurea (Steindachner) in Iowa Ponds

A study was conducted to evaluate growth of tilapia in Iowa ponds at various depths and several stocking densities. Information was also obtained on the care of tilapia in the laboratory, success of various sampling methods, and reproduction. Male tilapia had higher condition factors than females. Average daily increments in Lost Lake and Lake LaVerne during 1968 were 1.84 and 2.71 grams. In 1969, males in Lake LaVerne averaged 2.30 g per day and females 0.86 g. Growth of yearling tilapia in Iowa ponds was similar to that of Tilapia aurea stocked in freshwater and brackish water in Israel, despite the fact that in the latter, fish were fed and ponds were fertilized. Tilapia reproduction occurred in three Iowa ponds. Growth of young was variable.

Iowa Unit student, William Gale, sampling bottom fauna at Pool 19, Mississippi River.

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LOUISIANA COOPERATIVE FISHERY UNIT

The Louisiana Cooperative Fishery Unit is located at Louisiana State University in Baton Rouge. The Unit Leader is Dr. Jerry C. Tash, who joined the Unit in November 1967. The Assistant Leader, Mr. William H. Herke, has been with the Unit since it started in 1963.

Seven graduate students participated in the Unit program during the year. Three of these students received M.S. degrees. The Unit Leader taught Forestry 125, Limnology, to a class of 8 students.

The Unit Leader is conducting two limnological surveys, one on Toledo Bend Reservoir and the other on several small lakes at or near the University.

The Assistant Leader completed the collection phase of his study on the value of semi-impounded and natural marshes as nursery areas for fishes, shrimps and crabs. The data from 400 trawl samples were transferred to computer cards for processing.

TABLE 9. --Unit students, degrees sought, and study projects

Student	Degree	Subject
Bureau Staff advised:		
Gamble, Robert B.	M.S.	Bottom fauna in Toledo Bend Reservoir
Mills, Earl R.	*M.S.	Oil and oil-remover effects on shrimp
Pesnell, Gary L.	M.S.	Limnology of Toledo Bend Reservoir
Weaver, James E.	*M.S.	Trawl and benthic estuary studies
Unit Cooperator advised:		
Burnside, Marion C.	M.S.	Growth variability of channel catfish
Gravois, Claude T.	*M.S.	Commercial production of bullfrogs
Herke, William H.	Ph.D.	Louisiana tidal marshes as nursery areas

*Graduated

Abstracts of completed theses:

Claude T. Gravois, M.S., 1970

Growth Characteristics of the Bullfrog, Rana catesbeiana, under Crowded Conditions

Effects of crowding were investigated with respect to growth, feeding, mortality, and health of young growing bullfrogs (Rana catesbeiana). No significant differences in growth or food consumption were found among test groups (P .01). Crowding did not affect frog mortality or general health. Non-living food was acceptable to some frogs and weights gained on this food were comparable to weights gained by frogs eating living food.

Earl R. Mills, M.S., 1970

The Acute Toxicity of Various Crude Oils and Oil Spill Removers on Two Genera of Marine Shrimp

The acute effects of four crude oils and two oil spill removers on four species of marine shrimp were determined. Bioassays show that differences in toxicity existed between crude oils from different areas with all shrimp tested. The oil spill removers were more toxic than the crude oils. Oil spill removers added to crude oils increased the toxicity of both crude oils and removers. Evidence indicates that the most serious effects of oil pollution would be in the shallower areas where high concentrations of toxic compounds may build up.

James E. Weaver, M.S., 1969

Other Trawl and Benthic Studies in an Estuary at
Marsh Island, Louisiana

This study was conducted from March through September, 1968, in several lagoons at Marsh Island. Trawl and benthic samples were collected and analysed for organisms. Community structures of organisms within the weired and unweired lagoon areas were examined and pathways of energy utilization were extrapolated from stomach analyses and other data. Detritus was inferred to represent the largest portion of the food base within the lagoons.

Louisiana Unit Assistant Leader, William Herke, testing the salinity of water samples from the estuary study area.

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MAINE COOPERATIVE FISHERY UNIT

The Maine Cooperative Fishery Unit was established at the University of Maine, Orono, in November 1962. Dr. Richard W. Hatch has been the Unit Leader from the start. The Assistant Leader, Dr. Richard W. Gregory, joined the Unit in October 1969.

Research interests of the Maine Unit are centered on ecology of anadromous and fresh water sport fish with particular reference to quality of the environment and food organisms utilized by several species at various stages in their life history. The Unit is involved in studies of crustacea in both estuaries and ponds, pollution resulting from a century of activity in wood products industries, hatchery procedures involved in the production of smolt-size Atlantic salmon, the striped bass sport fishery, characteristics of existing Atlantic salmon streams, productivity and yield in Maine's warmwater lakes, and utilization of forage by landlocked salmon. Hydrographic data collected in the Penobscot River Estuary provide information for studies on seasonal fluctuations in forage species and a basis from which ecological changes resulting from pollution abatement can be evaluated. Research projects proposed for the future include distribution of malacostracan crustacea and their importance as forage for sport fish and studies of the early life history of the rare Sunapee and blueback trouts.

The Unit staff taught 4 formal courses during the year with a total attendance of 83 students (Zoology 168, Limnology; Zo 171, Fishery Management; Zo 270, Aquatic Biology; and Zo 357, Population Dynamics). The Unit had 8 graduate students, 2 of whom received their M.S. degrees.

The Unit Leader, in addition to his major duties of program planning and guidance of graduate students, continued to carry out 2 research projects.

Improving the quality of migrant-size Atlantic salmon produced for release in Maine rivers is a constant goal of the Craig Brook National Fish Hatchery. The Unit Leader has continued to advise the hatchery staff in design and analysis of experiments for evaluating changes in hatchery procedures. Experiments conducted in 1969 involved second-summer fish of two strains, two different pellet types, three pool types, and the effects of shading. Results continue to indicate that loading factor is the single most important determinant of growth in raceways. Strain differences are important in determining size achieved when loading is constant. Proximate analysis of salmon held overwinter under controlled photoperiod and temperature has been completed. Results show no great differences between salmon held on constant 8-hour and 12-hour day lengths and those held on normally varying day lengths. Extremely low return of salmon to all rivers along the coast made final evaluation of 1966 experiments impossible.

Hydrographic monitoring of the Penobscot Estuary was continued during 1969. Temperature, salinity and dissolved oxygen measurements at five stations were recorded through one-half a tidal cycle at monthly intervals. Dissolved oxygen levels dropped below 5 ppm at mid-depth and bottom during July and August, but in only one instance was a concentration below 4 ppm detected. Rainfall was heavy and stream flow remained high all summer.

The Assistant Leader reported for duty late in October 1969. Since his arrival, he has completed work on a manuscript involving data from his previous employment, developed materials for use in his teaching assignment, and planned and initiated a project to evaluate productivity and yield in Maine warmwater lakes. Data on waters of this type are needed by the State for long-range planning purposes. Initial efforts will be concentrated on South Branch Lake, an unpolluted body with an excellent reputation for its smallmouth bass fishery.

TABLE 10.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Bureau Staff advised:		
McNeish, J. Dennis	*M.S.	Sublethal effects of DDT on salmon performance
Otto, Robert S.	M.S.	Angler utilization of striped bass
Reid, William F., Jr.	M.S.	Crayfish distribution and utilization
Shorey, Wayne K.	*M.S.	Ecology of estuarine sawdust-bearing substrates
Speirs, Garrett D.	M.S.	Utilization of alewives by landlocked salmon
Taylor, John A.	M.S.	Water quality of Atlantic salmon streams
Trotzky, Howard M.	M.S.	Food habits of rainbow trout in the Kennebec River
Unit Cooperator advised:		
Clark, Loyd D.	M.S.	Biology of Praunus flexuosus in Maine waters
Embich, Thomas R.	M.S.	Ecology of sand shrimp in the Penobscot Estuary

*Graduated

The following are abstracts of theses completed during the year:

J. Dennis McNeish, M.S., 1969

Effects of Chronic, Sublethal Dosages of DDT on the Swimming Performance of Young Atlantic Salmon, Salmo salar Linnaeus

Effects of continuous feeding of DDT-treated food on the swimming performance of Atlantic salmon parr were investigated. Two groups of fish were fed DDT-treated food at concentrations of 0.01 and 0.02 mg DDT/kg of food for a period of 81 days. Swimming performance, percent hematocrit, mean total length, and average weight were measured after 30, 58, and 81 days of treatment. Whole body determinations of DDT, DDD, and DDE residues were made at each of these sampling periods. No significant differences in swimming performance, percent hematocrit, mean total length, or mortality were found at any sampling period. Statistical analysis indicated that differences in residue deposition between control and 0.01 ppm treatment group were not significant. Differences in deposition of DDE residues between control and 0.02 ppm treatment group were significant after 30 and 81 days as were total residues and DDT residues after 58 days. These differences seem to represent a real response in the 0.02 ppm group. The results of this and previous studies suggest that low level contamination of food supplies is unlikely to seriously alter survival capacity in fish.

Wayne K. Shorey, M.S., 1969

Macrobenthic Ecology of a Sawdust-bearing Substrate in the Penobscot River Estuary (Maine)

The macrobenthos of two selected stations in the Penobscot River Estuary (Maine) were sampled bimonthly, January through November, 1968. Sediment analyses were made by volume displacement in carbon tetrachloride to permit separation of sediment and sawdust. Sawdust concentrations (as percent of total sample) were nearly equal from the two stations. The polychaete Scolecolepides virdis and the bivalves Macoma balthica and Mya arenaria dominated the sandy sediments of the shallow stations. Prionospio malmgreni and Corophium volutator were the dominant species in the granular substrate of the deeper station. The population of the shallow station was seasonally more stable and had a higher mean monthly bio-index (number of individuals/number of species) than that of the deeper station. Suggestions have been made for further investigations on the role of sawdust in the ecology of estuarine benthos.

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MASSACHUSETTS COOPERATIVE FISHERY UNIT

The Massachusetts Cooperative Fishery Unit was established at the University of Massachusetts at Amherst in September 1963. Dr. James A. McCann is the Unit Leader. Dr. Roger J. Reed is the Assistant Leader. The University Cooperator is Dr. Charles F. Cole, Associate Professor of Fisheries Biology.

The Unit is located near the Connecticut River, the largest river system in New England, the 25,000-acre Quabbin Reservoir, and numerous lakes and ponds. The Atlantic Coast lies about 90 miles to the east. Unit studies are concerned with freshwater, anadromous, and marine fisheries.

There are 18 graduate students in the Unit program. Bureau staff members advised 9 M.S. students and 2 Ph.D. students. Dr. Cole advised 4 M.S. students and 3 Ph.D. students. Unit funds are utilized in the support of 6 of Dr. Cole's students.

During the fall semester, Dr. Reed taught a Fisheries Techniques Laboratory course to 21 students. He also shared the teaching assignment for a Technical Writing course, which had 8 graduate students enrolled.

Dr. McCann serves as advisor to the research activities of the Technical Committees for the Fisheries Management of the Connecticut River Basin and the Fisheries Investigations for the Lower Hudson River. His major research is investigating the effects of the Holyoke Dam complex on the mortality and behavior of the American shad and blueback herring in the Connecticut River. In addition, he is the principal investigator to an "Inventory of the Ponds, Lakes, and Reservoirs in Massachusetts Over Five Acres."

Dr. Reed completed his research on the biology of the fallfish and is currently determining the energy expended in their nestbuilding activities. He continued to evaluate SCUBA and snorkeling as research tools in fisheries. Age and growth studies on johnny darter, longnose and blacknose dace are near completion. A new project was initiated to locate American shad spawning grounds between Holyoke and Turners Falls Dams.

TABLE 11.--Unit students, degrees sought, and project subjects

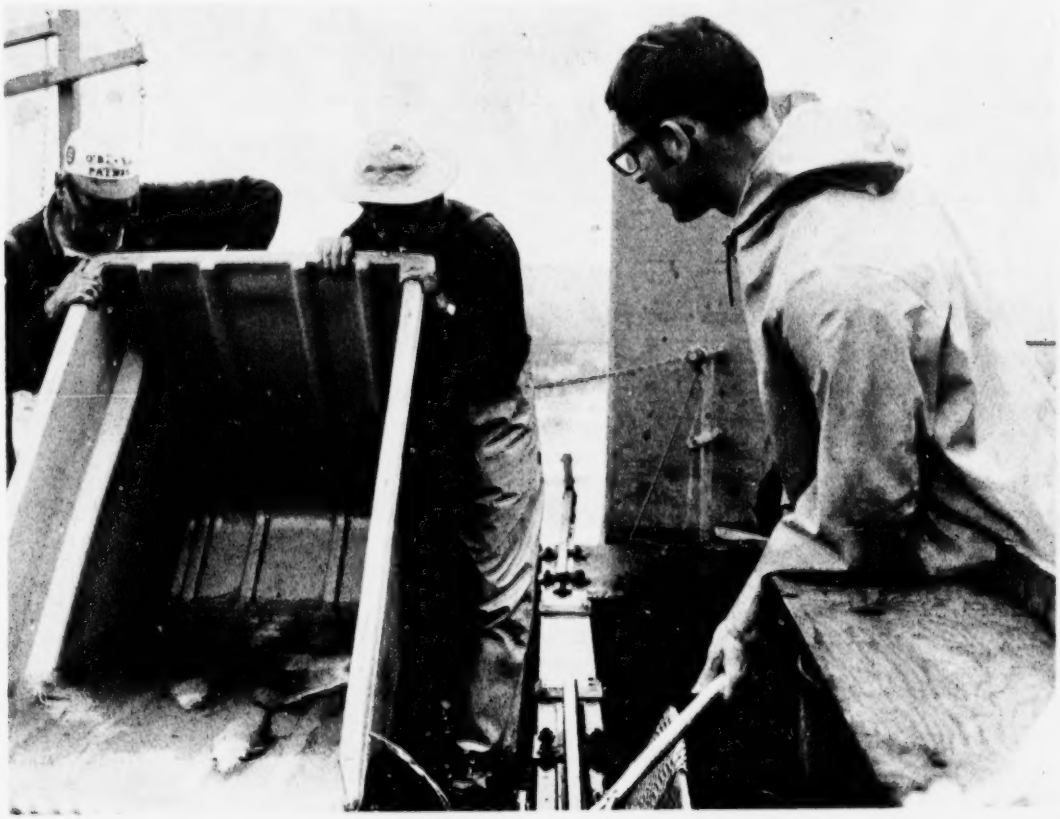
Student	Degree	Subject
Bureau staff advised:		
Elliot, Wayne P.	M.S.	Some ecological parameters of Bassett Pond New Salem
Freeman, Bruce L.	M.S.	Evaluation of methods to collect marine sport fishery statistics
Godfrey, Paul J.	M.S.	A biological investigation of the effects of pollution on the aquatic environment and organisms in the Millers River watershed
Katz, Harvey M.	M.S.	Migration and behavior of the American shad as affected by environmental parameters in the Connecticut River
Levesque, Raymond C.	M.S.	The relationship of available flora and fauna to the food intake of juvenile American shad in the Connecticut River
MacInnes, John R.	M.S.	An evaluation of the creel survey design used on Quabbin Reservoir
Moulton, James C.	M.S.	The fishery potential of four aquatic environments created by interstate highway construction
Oatis, Peter H.	M.S.	The effects of pollution on the ichthyofauna of the Millers River
Piehler, Glenn R.	Ph.D.	Evaluation of some sampling procedures for estimating numbers and attributes of marine sport fishermen

Scherer, Michael D.	M.S.	Some aspects of the life history of the blueback herring in the Connecticut River
Watson, Jay F.	Ph.D.	Distribution and abundance of juvenile American shad in the Connecticut River above the Holyoke Dam

Unit Cooperator advised:

Crestin, David S.++	M.S.	Early life history of the rainbow smelt in the Weweantic River estuary
Frame, David W.++	Ph.D.	Seasonal utilization of food by juvenile winter flounder in an estuarine ecosystem
Howe, Arnold B.++	M.S.	Biological investigation of Atlantic tomcod in the Weweantic estuary
Phillips, James W.	Ph.D.	To be assigned
Serchuk, Fredric M.++	M.S.	The ecology of the cunner in the Weweantic River estuary
Smith, Roderick M.++	Ph.D.	Chlorinated hydrocarbon insecticide effects on the survival of larval winter flounder
Stolgitis, John A.++	M.S.	The fecundity and early life history of the tautog in the Weweantic River estuary

++ Supported totally or partially by Unit funds



Massachusetts Unit student, Ray Levesque dipping American shad from cart at Holyoke Dam on the Connecticut River.

MISSOURI COOPERATIVE FISHERY UNIT

The Missouri Cooperative Fishery Unit is located at the University of Missouri in Columbia. Dr. Richard O. Anderson is the Unit leader and Dr. Daniel W. Coble, the Assistant leader. Drs. Robert S. Campbell and Arthur Witt, Jr. serve as Unit Cooperators and members of the University Biology Division.

Unit research emphasizes warm water fish production, and population dynamics. Dr. Anderson's studies are to increase understanding of ecological and physiological factors influencing growth, and managing the dynamics of fish production and harvest. Dr. Coble's studies cover effects of environmental factors on competition and predation relationships among various fish species.

During 1969-1970, Drs. Anderson and Coble taught five courses having a total of 21 students. They also advised eight graduate students in Unit projects.

TABLE 12. --Unit students, degrees sought, and project subject

Student	Degree	Subject
Bureau Staff advised:		
Caputo, F.	M.A.	Changed major, left unit
Chang, K	M.A.	Largemouth bass-bluegill vital statistics in a 2 A pond
Farabee, G.	*M.A.	Learning and memory and angling vulnerability of largemouth bass
Mauck, W.	*M.A.	Selective predation by northern pike
McComish, T.	Ph.D.	Growth and bioenergetics of bluegill
Michaelson, S. Anderson	*M.A.	Balanced and unbalanced largemouth bass-bluegill populations
Stock, J.	M.A.	Gizzard shad stock and recruitment
Woodward, D.	*M.A.	Effects of malathion on learning and memory of goldfish
Unit Cooperator advised:		
Busacker, G.	M.A.	Benthic abundance and growth of largemouth bass in Thomas Hill Reservoir
Chambers, Sandra	M.A.	Life history of the Missouri bleeding shiner
Chen, T.	Ph.D.	Channel catfish cage culture in a thermal discharge, Thomas Hill Res.
Choate, J.	*M.A.	Effects of a 12-inch length limit on smallmouth bass on Little Dixie Lake
Knox, R.	M.A.	Drafted
O'Bryan, G.	Ph.D.	Limnology of Thomas Hill, a reservoir receiving a thermal discharge
Holz, D.	*M.A.	Flathead catfish and invertebrates in channelized and unchannelized portions of the Missouri River
Walsh, D.	M.A.	Multiple exposures of Abate to bluegill and invertebrates in warm water ponds

*Graduated

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The following are abstracts of completed theses:

G. B. Farabee, M.A., 1970

Factors Influencing the Vulnerability of Largemouth Bass to Angling and the Comparative Learning Ability of Selected Fishes

Several species of fish developed a conditioned response to light with shock as a punishment in a shuttle box. Rate of learning of final level achieved was highest for channel catfish, carp and bigmouth buffalo; intermediate for black bullhead, largemouth, smallmouth and spotted bass; and lowest for rainbow trout, bluegill and northern pike. There was much variation in performance between individuals within a species. Performance of young-of-the-year bass was similar to that of adults. In largemouth bass and channel catfish retention of the conditioned response was good for a week and declined thereafter. There was significant correlation between performance in the shuttle box and vulnerability to angling for largemouth bass. Vulnerability of bass in ponds also was influenced by turbidity and available forage, factors that also affected growth.

W. L. Mauck, M.A., 1970

Vulnerability of Various Fishes to Northern Pike Predation

To compare relative vulnerability to northern pike predation several species of fish were offered in various combinations to northern pike in plastic pools with and without cover and in 0.04 ha ponds. Gizzard shad, carp, bigmouth buffalo and fathead minnow in that order were most vulnerable to pike predation. Smallmouth bass, white sucker, green sunfish, largemouth bass, golden shiner and yellow perch showed intermediate vulnerability. Channel catfish, northern pike, bluegill and black bullhead were least vulnerable. In two experiments in which fish were put in cages of 0.9 x 0.75 x 3.0 m in turbid water, relative vulnerability was the same as in clearer water. In experiments in which an attempt was made to condition pike to eat golden shiner or bluegill, no effect of conditioning on species selection was apparent. Size selectivity varied with size of both predator and prey. There was a tendency for certain sizes of pike to select smaller carp, fathead minnow and bluegill within size ranges tested.

S. M. Michaelson, M. A. 1970

Dynamics of Balanced and Unbalanced Bass-Bluegill Populations in Ponds in Boone County, Missouri

Largemouth bass-bluegill populations from 3 balanced and 2 unbalanced ponds in central Missouri were recovered with sodium cyanide. F/C ratios ranged from 4.76 to 6.82 in balanced ponds and were 1.95 and 15.88 in unbalanced; harvestable size bluegill by weight were 66 percent and 16 percent, respectively. Bluegill growth was similar in the two kinds of ponds in the first two years of life, but growth rate was greater in balanced ponds thereafter. In unbalanced ponds certain sizes of bluegill that were present at high densities and lower condition factors than bluegill of the same sizes in balanced ponds. Nevertheless, it was not possible to show differences in length-weight relationships among ponds. In unbalanced ponds mortality rate of small and intermediate size bluegill was lower than in balanced ponds, and for larger bluegill it increased markedly with fish size. In balanced ponds small and intermediate size bluegill had relatively high mortality rates, and adult bluegill had such low mortality rates that longevity was up to 3 years longer than in unbalanced ponds. Bluegill recruitment seemed to be more consistent in balanced ponds. One unbalanced pond contained just one largemouth bass. The other had 169 kg/ha and 80 percent by weight harvestable bass. Balanced ponds contained 84 kg/ha and 77 percent by weight harvestable bass. Growth rates of largemouth bass were similar among ponds.

1366

D. A. Woodward, M.A., 1970

Some Effects of Sublethal Concentrations of Malathion on Learning Ability and Memory of the Goldfish

Goldfish were capable of learning a simple avoidance response through training to avoid light by the use of mild electric shock. Training on 4 successive days resulted in an increased efficiency in making the avoidance response. Exposing goldfish to malathion before training had little effect on first day of learning ability. However, learning on days 2 and 3 of training was reduced in the treated fish. Memory of the avoidance response in goldfish lasted for at least 3 days. Retraining on the third day resulted in an avoidance tendency greater than on the first day. However, exposure to malathion during the three days between trials lowered the avoidance tendency from that predicted from untreated fish. There was also a decrease in AChE activity of the treated fish. Goldfish trained on 4 successive days developed a proficient avoidance response which became greater on the fifth day without further shock reinforcement in fish unexposed to malathion. Exposure to malathion between the fourth and fifth day resulted in a lowered avoidance tendency. It was proposed that malathion was acting on "long-term" memory. There was no effect on initial learning experience, but after prior experience, the treated fish were less capable of retaining the avoidance response. This study related a biochemical modification by malathion with a biological modification. Malathion may affect memory through AChE inhibition. However, the effect of malathion on memory was probably broader than explained by AChE inhibition alone. Behavioral parameters provide a comprehensive and sensitive tool to measure the sublethal effects of pesticides on the intact fish. Results of this type can be compared to acute toxicity tests to determine "safe" concentrations.

Missouri Unit student examining aquatic vegetation in one of the experimental fish tanks.

1367

MONTANA COOPERATIVE FISHERY UNIT

The Montana Cooperative Fishery Unit was established at Montana State University, Bozeman, in September 1963. The Unit Leader, Dr. Richard J. Graham, has been with the Unit from the start. The Assistant Leader, Dr. William R. Gould, joined the Unit in December 1963. Dr. C.J.D. Brown is the principal Unit Cooperator.

The Unit is located in southwestern Montana near the headwaters of the Yellowstone and Missouri Rivers. These rivers and many of their tributaries are excellent trout fishing streams and have national as well as local importance. The Unit emphasizes studies on the ecology of streams, particularly the effects of physical and chemical changes on the distribution and abundance of trout and aquatic insects.

During the 1969-1970 school year, the Unit Leader and Assistant Leader taught 3 formal courses having a total enrollment of 51 students. Courses included Ichthyology, Fisheries Management, and Pollution Biology.

The Unit Leader continued a study on the population dynamics of brown trout in Bluewater Creek. Population estimates were made in the fall and spring and information was obtained on year-class abundance, growth rates, mortality rates and annual production.

The Assistant Leader completed work on the distribution of the sculpins and finescale dace in Montana.

The Unit staff began a preliminary study on the fisherman use, trout harvest and trout population of the West Gallatin River. This is part of a large interdisciplinary study being conducted by Montana State University and financed by the National Science Foundation to measure the impact of a large recreational development on a semiprimitive environment.

TABLE 13.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Bureau Staff advised:		
Glorvigen, Thomas	M.S.	Effects of sewage discharges on aquatic insects
Peterman, Larry	M.S.	The grayling of Agnes Lake
Peterson, Norman	*M.S.	Trout yield from Big Spring Creek
Wasem, Robert	M.S.	Age and growth of fishes in Glacier National Park
Workman, Dennis	M.S.	Fish populations of two lakes
Zillges, Gordon	M.S.	Effects of siltation on aquatic insects
Unit Cooperator advised:		
Athappily, James	Ph.D.	Fecundity of brown trout
Naegele, John	M.S.	Relationship of temperature and collagen in rainbow trout

*Graduated

The following is an abstract of a completed thesis:

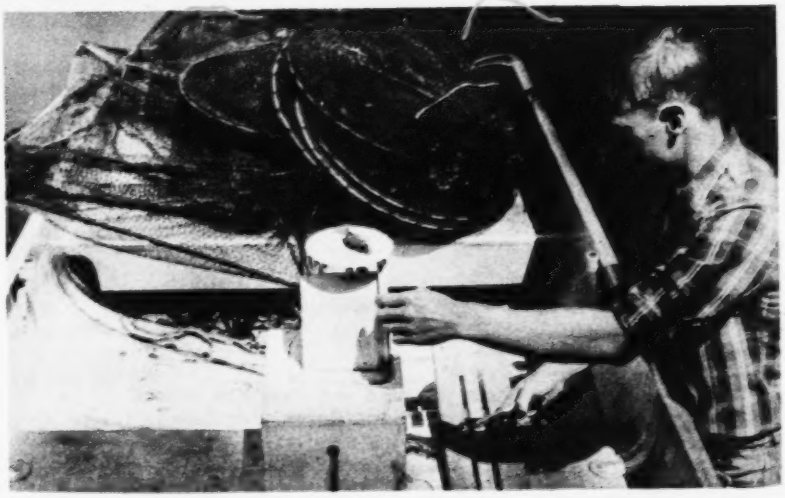
Norman W. Peterson, M.S., 1970

The Yield of Wild and Hatchery Trout
from Big Spring Creek, Montana

Estimates on the yield of wild and hatchery trout were made on a portion of Big Spring Creek, Montana, during the fishing seasons of 1968 and 1969. The stream was divided into two study sections based on habitat quality, trout populations and fishing intensity.

Rainbow trout represented about 80 percent of the wild trout populations within each sampling subsection (A_1 and B_1) during both years. An estimated 49 percent in 1968 and 55 percent in 1969 of all fishermen were interviewed. Total fisherman-hours were estimated by using "fishing intensity curves". The total fisherman-days per stream mile was 635 for 1968 and 534 for 1969. The total fisherman-days per acre for the respective years was 128 and 104. In 1968, 11,986 game-fish (hatchery trout included) were caught during 5,077 fisherman-days for an average of 2.36 game-fish per fisherman-day. In 1969, 7,774 game-fish were caught during 4,109 fisherman-days for an average of 1.89 game-fish per fisherman-day. The yield of wild game-fish increased 14.3 percent from 1968 to 1969 while the catch rate of wild trout increased from 0.27 per hour to 0.36. The correlation coefficient for the relationship between late summer wild trout populations and yield was 0.97. Wild rainbow trout were not caught and kept in proportion to their relative abundance with respect to size and age. Age groups II and III contributed proportionally more to the yield than did age group I. The effects of a 50 percent reduction in stocked hatchery trout on yield, fishing pressure, percent returned, and catch rate are discussed.

Montana Unit student, Gordon Zillges, measuring stream flow.



Montana Unit student, Dennis Workman, processing fish in the pothole lakes study.

1969

NEW YORK COOPERATIVE FISHERY UNIT

The New York Cooperative Fishery Unit was established at Cornell University, Ithaca, in September 1963. The Unit Leader, Dr. Alfred W. Eipper, has been with the Unit since its beginning. The Assistant Leader, Dr. Clarence A. Carlson, joined the Unit in 1966.

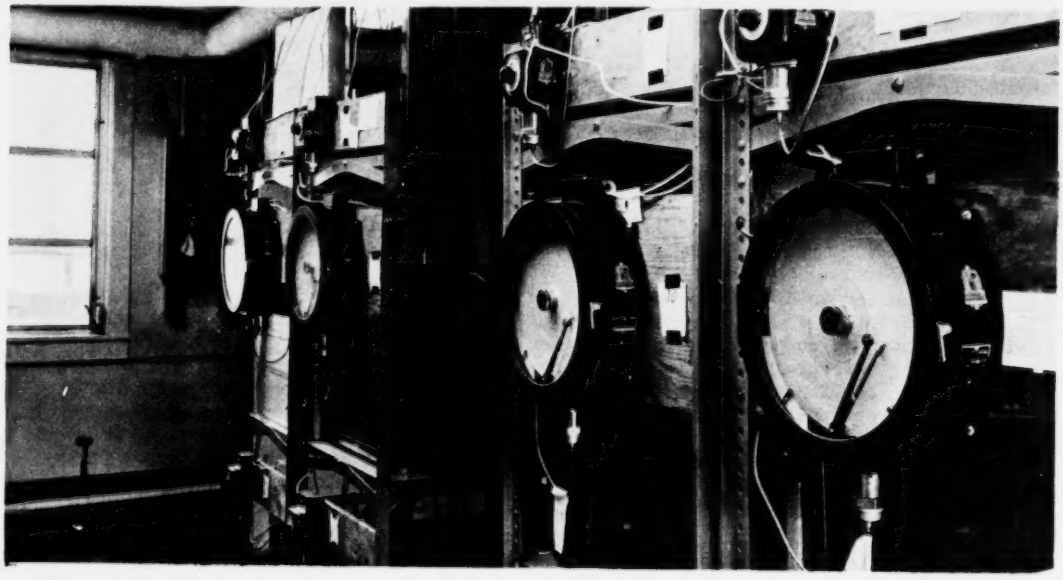
The major objective of the Unit has been to supplement teaching and research in fishery science at Cornell. Its major research goals are identification and interpretation of causes of mortalities in immature warm-water fishes. The primary research objectives to date concern the understanding of mechanisms responsible for first-year mortality of largemouth bass and development of technology essential for the study of young fishes.

The Unit staff taught 3 fishery courses during the year and participated in teaching 2 others. About 75 students were enrolled in the 5 courses. Students supervised included 32 undergraduates and 11 graduates.

Dr. Eipper continued his investigations of methods of collecting large samples of small fishes from ponds. He worked on plans for a water recirculation system for the Fishery Laboratory. He conducted an inventory of experimentally marked largemouth bass in ponds at the Cape Vincent Fishery Research Station. Dr. Carlson continued his studies on the effects of predation on young-of-the-year largemouth bass populations and supervised research related to radioecology.

TABLE 14.--Unit students, degrees sought, and projects subjects

Student	Degree	Subject
Bejda, Allen J.	M.S.	Development of a food source for largemouth bass larvae under experimental conditions
Laurence, Geoffrey C.	Ph.D.	The role of food in the mortality of largemouth bass larvae
Miller, Roy W.	M.S.	Effects of fanning on the dissolved oxygen environment of largemouth bass embryos
Shealy, Malcolm H.	Ph.D.	Predation on largemouth bass during their first year of life



Controlled temperature aquaria at the New York Unit.

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NORTH CAROLINA COOPERATIVE FISHERY UNIT

North Carolina State University in Raleigh is the site of the North Carolina Cooperative Fishery Unit. Dr. F. Eugene Hester has been Unit leader since the Unit was established in April 1963. The Assistant leader, Mr. Robert E. Stevens, who joined the staff in January 1966, resigned in May 1970.

Seven graduate students received support from the unit during the year. A total of 46 students enrolled in 4 courses given by the Unit staff.

Unit research continued on factors affecting growth, reproduction, and population dynamics of freshwater fishes. The leader is studying growth, reproduction, and hybridization of sunfish plus production of channel catfish in ponds. Prior to his resignation Mr. Stevens examined hormonal relationships affecting oocyte maturation and ovulation in largemouth bass.

TABLE 15.--Unit students, degrees sought, and project subject

Student	Degree	Subject
Bonner, William R.	M.S.	Seasonal pattern of growth and scale development of bluegills in Bear Creek Lake
Davies, William D.	Ph.D.	The tolerance of striped bass fry and fingerlings to various levels of temperature, pH and total dissolved solids
Geddings, William R.	M.S.	The relative importance of the stocking of 30,000 fingerling striped bass on the striped bass fishery of Mattamuskeet Lake
Meshaw, John C., Jr.	M.S.	Feeding selectivity of striped bass fry and fingerlings in relation to zooplankton availability
Reagan, Roland E.	Ph.D.	The heritability of rapid growth in channel catfish
Stevens, Robert E.	Ph.D.	Hormonal relationships affecting oocyte maturation and ovulation in largemouth bass
Tyus, Harold M.	Ph.D.	Population size and harvest of alewives during spawning migration from Pamlico Sound to Lake Mattamuskeet

*Graduated

The following is an abstract of completed thesis:

John Cardon Meshaw, Jr., M.S. 1969

A Study of Feeding Selectivity of Striped Bass Fry
and Fingerlings in Relation to Zooplankton Availability

A study was conducted to determine feeding selectivity of young striped bass in relation to the available food. The eight-week study was made in six hatchery ponds containing natural populations of zooplankton organisms and into which larval striped bass were stocked. Feeding selectivity was determined by comparisons of the percentage occurrence of zooplankton in the fish stomachs and in the plankton. Young striped bass were highly selective for Cyclops while they selected against Bosmina, Ceriodaphnia, Daphnia, nauplius larvae, and rotifers. Chironomid larvae and ostracods were occasionally consumed in large numbers by the fish, but selectivity for these forms could not be determined. Small numbers of other cladocerans, copepods, and immature insects were also consumed.

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OHIO COOPERATIVE FISHERY UNIT

The Ohio Cooperative Fishery Unit was established at Ohio State University, Columbus, in October 1965. The Unit Leader, Dr. Richard A. Tubb, joined the Unit in June 1967. The Assistant Leader, Mr. Stephen A. Taub, has been with the Unit since June 1966. University faculty members working with the Unit as cooperators include Dr. N. Wilson Britt, Mr. Clarence F. Clark, Dr. Walter T. Momot, Dr. Loren S. Putnam, Dr. Wilbur M. Tidd, and Dr. Milton B. Trautman.

The Unit had 15 students during the year. Ten of these were advised by Bureau staff members. The Unit Leader taught Zoology 653, Fish Ecology, to 16 students. He also participated in the instruction of Natural Resources 620, Fishery Management, which had 20 students enrolled. The Assistant Leader taught Zoology 694, Fishery Techniques, to 12 students.

Study projects at the Ohio Unit are characterized by their diversity as indicated in the following lists.

Unit Leader studies:

1. An environmental evaluation of a nuclear power plant site (with Dr. L.S. Putnam and Elizabeth M. Thompson).
2. The status of whirling disease, Myxosoma cerebralis, in Ohio waters (with Dr. Wilbur M. Tidd).

Assistant Unit Leader studies:

1. An evaluation of largemouth bass utilizing crayfish as a primary source of food.
2. Biology of the western tonguetied chub (with Dr. Milton B. Trautman, in cooperation with the Ohio Division of Wildlife).
3. Biology of hybrid bass, genus Micropterus (with Dr. Milton B. Trautman and Mr. Charles Hodgen in cooperation with the Hebron National Fish Hatchery and the Ohio Division of Wildlife).

TABLE 16.--Unit students, degrees sought, and study projects

Student	Degree	Subject
Barans, Charles	Ph.D.	Thermal preferences of Lake Erie fishes
Burkett, Robert	Ph.D.	To be determined
Cody, Terrance	Ph.D.	Primary productivity in western Lake Erie
Fikes, Martha	M.S.	Uptake, retention and release of dieldrin in the three ridged mussel
Gartman, Donald	*M.S.	Abundance and distribution of zooplankton in Hoover Reservoir
" "	Ph.D.	Destratification of quarries for use as trout ponds
Judd, John	M.S.	Aspects of the life history of the largemouth Buckeye Lake, Ohio
Lisiecki, Jerry	M.S.	Physical and chemical characteristics of highway borrow pit ponds
Mayhew, David	M.S.	Fishery potential of borrow pit ponds in different soil types
Preston, Ronald	Ph.D.	To be determined
Sisk, Morgan	Ph.D.	Stream drift and its utilization in warm water fishes
Unit Cooperator advised:		
Birch, Thomas	*Ph.D.	Sources of pollution in Hoover Reservoir
Dudrow, William	Ph.D.	Colonization of benthic invertebrates in Hoover Reservoir
Herman, Roger	*Ph.D.	Some physiological and histological effects of gossypol on rainbow trout

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Stein, Carol	Ph.D.	The life history of the three ridge mussel
Thompson, Elizabeth	Ph.D.	Effects of dieldrin on the hatching success of walleye eggs

* Graduated

Abstracts of completed theses:

Donald K. Gartman, M.S., 1969

The Abundance and Distribution of Zooplankton in Hoover Reservoir, Ohio

Samples of zooplankton were taken in Hoover Reservoir from April 27, 1968, through May 12, 1969. Six stations were sampled at 1 and 3 m depths throughout the year. Two-24 hour surveys were conducted at one station to study the extent of vertical migration of the plankters. Results showed there were nine species of zooplankton which occurred frequently throughout the reservoir. Three species of Daphnia were identified: Daphnia parvula, Daphnia pulex, and Daphnia galeata mendotae. Daphnia parvula and D. pulex were counted as one species, Daphnia "p", because of unreliable identification in the Sedgewick-Rafter cell. This complex was more abundant than D. galeata mendotae in 1968 and D. galeata mendotae was the most numerous Daphnia in 1969. Bosmina longirostris was the most numerous cladoceran throughout the year. Copepods were represented by Diaptomus siciloides and Cyclops sp. Copepods were abundant in spring along with cladocerans. There were consistent populations of copepods in the samples taken from under the ice in the winter months. Nauplii were found throughout the year. Keratella cochlearis was the most numerous rotifer. The synoptic survey showed high concentrations of zooplankton in the middle basin and along the west shore. There were no statistically significant differences in zooplankton numbers among the stations throughout the year. Twenty-four-hour surveys indicated vertical migration was most pronounced by the cladocera and that copepods and rotifers did not demonstrate this pattern as well. Copper sulfate treatment must be considered when studying the biota of water impoundments because of its possible toxic effects on zooplankton and other organisms in that ecosystem.

Thomas J. Birch, Ph.D., 1969

Sources of Pollution in the Drainage Basin Contributing to the Eutrophication of Hoover Reservoir, a Water-Supply Impoundment for the City of Columbus, Ohio

The results are summarized in the following 3 tables.

TABLE A.--Stream sources of phosphate and nitrate

Nutrient	Big Walnut Creek (Percent)	Little Walnut Creek (Percent)	Annual Total (Pounds)
Total phosphate	89	11	317,490
(Soluble phosphate)	(99)	(1)	(215,605)
Nitrate	81	19	776,840

TABLE B.--Surface runoff sources of phosphate and nitrate

Sources	Total Phosphate (Percent)	Nitrate (Percent)
Agricultural	58	98
Waste water	37	2
Urban	2	-1
Undetermined	3	-1

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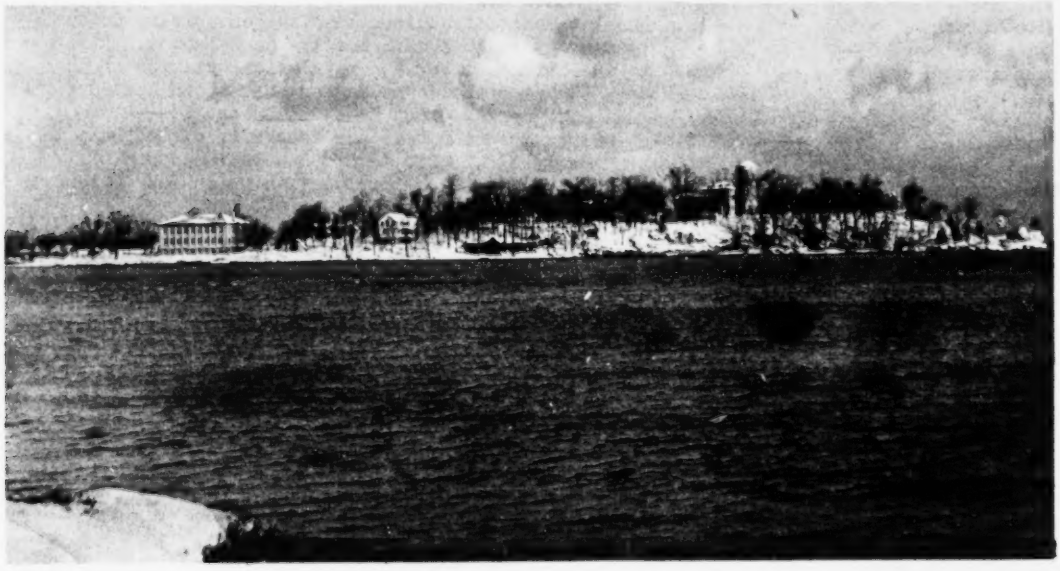
TABLE C.--Total sources to the reservoir of total phosphate and potential nitrate

Sources	Total Phosphate (Percent)	Nitrate (Percent)
Agricultural runoff	42	72
Reservoir sediment	28	12
Waste water effluent	27	1
Urban runoff	1	1
Ground water and precipitation	1	3
(Nitrogen fixation)	--	10

Roger L. Herman, Ph.D., 1969

Some Physiological and Histological Effects of Gossypol on Rainbow Trout (Salmo gairdneri)

Gossypol is a naturally occurring pigment in cotton plants which is toxic to many animals. Rainbow trout were fed a synthetic diet containing either gossypol acetate or cottonseed meal with various amounts of naturally occurring gossypol. Growth suppression was found with diets containing 290 ppm or more of free gossypol. Fish receiving 531 ppm free gossypol suffered severe reduction of hematocrit, hemoglobin and plasma proteins in addition to growth suppression. Reduction of gossypol to 303 ppm improved growth, hematocrit and hemoglobin levels over a six-month period but not to the control levels. Diets containing 95 ppm or more free gossypol caused histological changes in the liver and kidney. Thickening of the basement membrane of the glomeruli was found in all fish receiving such levels. Liver necrosis was seen with diets containing 95, 290, and 333 ppm free gossypol but not with 531 ppm. Fish fed 290 ppm or more exhibited ceroid accumulations of increasing magnitude in the liver, or the liver, spleen, and kidney. A provisional dietary limit of 100 ppm free gossypol would be suggested on the basis of the data presented. A level of 300 ppm free gossypol would be an absolute maximum permissible.



The Franz Theodore Stone Laboratory of The Ohio State University is located on Gibraltar Island, Put-in-Bay, Ohio in western Lake Erie.

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OKLAHOMA COOPERATIVE FISHERY UNIT

The Oklahoma Cooperative Fishery Unit is located at Oklahoma State University in Stillwater. Dr. Robert C. Summerfelt has been Unit Leader since September 1966. The Assistant Leader, Dr. Bradford E. Brown, transferred from the Unit in February 1970, after more than 5 years of service. His replacement, Dr. Austin K. Andrews, reported for duty on July 1, 1970.

During the academic year, the Unit had 14 graduate students. M.S. degrees were awarded to 2 students. The Unit staff taught 2 formal courses and 2 seminars having a total enrollment of 37 students.

The Unit program included studies of fish diseases, physiology, life histories, habitat requirements, and factors influencing fish production.

Dr. Summerfelt's research was concerned with food habits of commercial fishes in Oklahoma reservoirs, effects of destratification on primary productivity and distribution of fishes and zooplankton, cage culture of rainbow trout, channel catfish and tilapia and a fee pond fishery.

Dr. Brown developed, reviewed,and evaluated programs for statistical treatment of fishery data and conducted a survey of urban fishing programs.

TABLE 17.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Hover, Ronald	M.S.	Influence of aeration and artificial destratification on the distribution of fish in Eufaula Reservoir, Oklahoma
Hughes, David	M.S.	Cage culture of Tilapia mossambica in Lake Atitlan, Guatemala
Hysmith, Bruce	M.S.	Influence of sediment cycling on primary productivity in Lake Carl Blackwell, Oklahoma
Lingenfelter, Dennis	M.S.	Relationship between population dynamics of the white crappie and angler harvest in heated fishing docks, Grand Lake, Oklahoma
Mauck, Paul E.	*M.S.	Growth, food habits and fecundity of the carp in a turbid, 3,000-acre Oklahoma reservoir
Parrack, Michael	*M.S.	Evaluation of commercial fishing in four Oklahoma reservoirs
Sober, Gary	M.S.	Experimental transmission of Plistophora ovariae
Spall, Richard D.	Ph.D.	Host-parasite relationships of Posthodiplostomum minimum
Tafanelli, Robert	Ph.D.	Toxicity and pathogenic effects of intraperitoneal injections of cadmium chloride to the goldfish
Turner, Paul R.	M.S.	Growth, food habits and fecundity of the flathead catfish in several Oklahoma reservoirs
	Ph.D.	Population dynamics of flathead catfish
Warner, Mark C.	Ph.D	Pathological effects and transmission of Plistophora ovariae (Protozoa: Microsporida), a parasite causing sterility in female golden shiners.
Zweiacker, Paul	Ph.D.	Population characteristics of the largemouth bass in Lake Carl Blackwell, Oklahoma

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The following are abstracts of completed theses:

Paul E. Mauck, M.S., 1970

Food Habits, Length-Weight Relationships, Age and Growth, Gonadal-Body Weight Relationships and Condition of Carp Cyprinus carpio (Linnaeus) in Lake Carl Blackwell, Oklahoma

Carp were collected from Lake Carl Blackwell during the sampling period December 1967 through November 1968. The majority of the carp were collected by electro-fishing the shoreline of the lake. The objective of this study was to describe certain aspects of the life history of the carp in a turbid, 3,000-acre Oklahoma reservoir. Aspects of the life cycle under study were as follows: (1) the food habits and seasonal variation in foods eaten; (2) the length-weight relationships and coefficients of condition; (3) age and annual growth; and (4) the spawning period as determined from gonadal-body weight relationships.

The diet of 45 young carp was composed of detritus (76.2%), animal materials (20.9%), and plant seeds (2.9%). Cladocerans, copepods and ostracods were the primary animal organisms eaten by young carp. The food items consumed by 211 adult carp consisted of detritus (73.2%), animal materials (9.7%), and plant materials (12.1%). Seasonal variation in the diet of the carp was observed.

The length-weight relationship was found to be Log W = -10.5355 + 2.3638 Log L. The slope of the regression line was less than 3.0 indicating that carp in Lake Carl Blackwell usually became less robust with increased body length.

No apparent differences in coefficients of condition existed between males and females. The average K value for 619 fish was calculated to be 1.22.

During this study spawning occurred between the last week of April and approximately May 20.

The calculated growth rates show that carp grew most rapidly during their first summer of growth. A gradual reduction in mean annual growth increment occurred with an increase in age. Carp in Lake Carl Blackwell grew at slower rates than any other Oklahoma impoundment for which the author found published data.

Michael L. Parrack, M.S., 1970

An Analysis of Three Commercial Harvest Estimation Procedures Used in the Oklahoma Commercial Fishery

The commercial fishery on four Oklahoma reservoirs was sampled from July 1967 through June 1968. The total harvest was estimated by two ratio estimators and a simple expansion estimator. These three statistical estimates were compared with a questionnaire census of fishermen catches of the total harvest. An analysis of accuracy and precision of these estimators was made and the fishery described.

The total harvest figure obtained from the questionnaire census was smaller than the figure obtained from statistical estimates. This was due, in part, to fishermen not reporting unsalable portions of the catch. An estimate based on the catch per fisherman trip was the most accurate of the three statistical estimates made. The harvest as estimated by that procedure was 1,126,536 pounds for the four reservoirs sampled. Estimates based on the catch per 100 feet of net fished for 24 hours were inaccurate because accurate totals of feet of net fished and hours fished could not be obtained with the procedures used. If the figure can be accurately obtained, such

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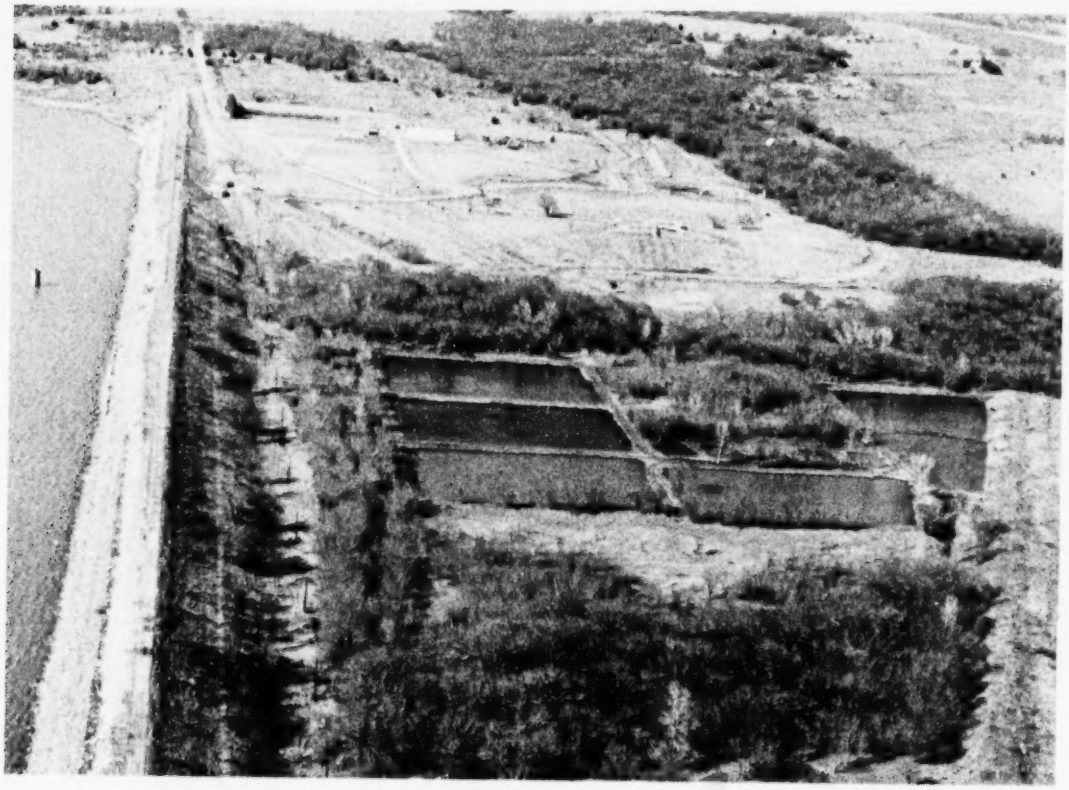
methods are useable because the catch per 100 feet per 24 hours can be unbiasedly estimated from samples. The ratio estimators were more precise (their variances were lower) than the simple expansion estimate.

The Oklahoma commercial fishery was small with 80 full and part-time fishermen fishing with gill and trammel nets on reservoirs. The bulk of the catch was buffalo spp., flathead catfish, and carp. The average sizes of fishes harvested were larger than in many other Mississippi River drainage state fisheries. Fishermen caught 193 pounds per trip or 4.42 pounds per 24 hours per 100 feet of net fished. On the average 5.4 pounds per acre (six percent of the standing crop excluding clupeids) were harvested commercially in Oklahoma.



Fish culture research station at the Oklahoma Unit. The U.S. Department of Agriculture's Outdoor Hydraulic Laboratory is in the background and Lake Carl Blackwell is to the left.

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OREGON COOPERATIVE FISHERY UNIT

The Oregon Cooperative Fishery Unit is located at Oregon State University at Corvallis. Dr. Raymond C. Simon is the Unit leader. The position of Assistant leader has remained vacant since May 1969.

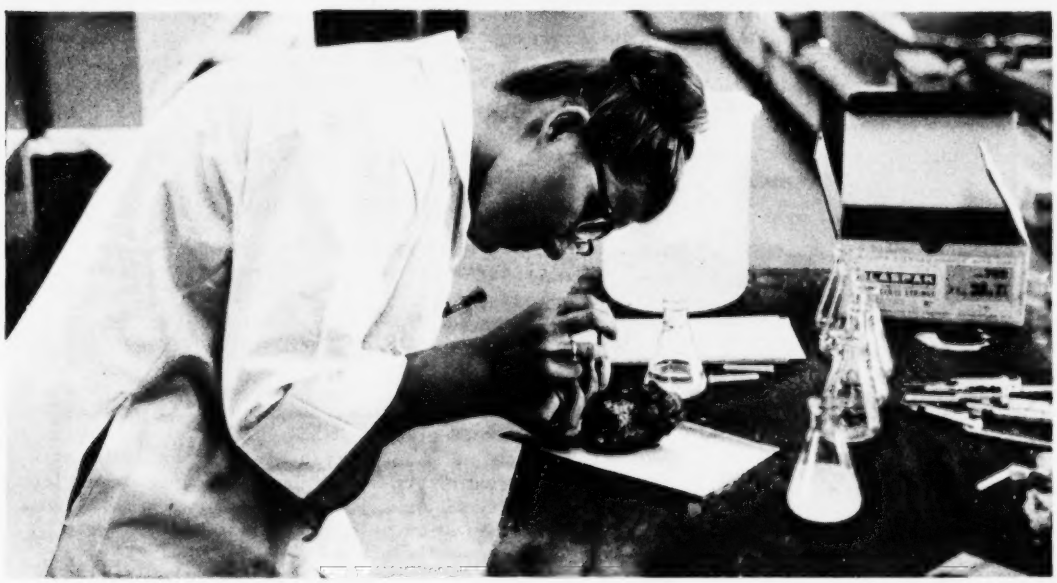
Seven graduate students received support from the Unit. None received degrees during the period.

Dr. Simon taught a graduate course entitled, Fish genetics. Twelve students enrolled.

Unit staff inquiry covers the genetics of the salmonids in the following areas: genetics and biochemistry of enzymes, cytogenetics, population genetics, natural and artificial selection, and nucleic acid studies.

TABLE 18.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Bennett, D. E.	M.S.	Biology of redtail surf perch
Blanc, J. M.	Ph.D.	Genetics (topic not decided)
Gharrett, A. J.	M.S.	DNA homology; salmonid races
Graybill, J.R.	Ph.D.	Heretability of coho salmon attributes
Kan, T. T.	Ph.D.	Variation in lampreys
Lannan, J.E., Jr.	Ph.D.	Population genetics, Pacific oyster
Wilmot, R. L.	Ph.D.	Cytogenetics, Oregon trouts



Oregon Unit graduate assistant withdrawing gametes from a female oyster for use in experimental genetic crosses.

1978

PENNSYLVANIA COOPERATIVE FISHERY UNIT

The Pennsylvania Cooperative Fishery Unit was activated at Pennsylvania State University, University Park, in November 1963. The Unit Leader, Dr. Robert L. Butler, has been with the Unit from the start. Dr. Robert F. Raleigh, the Assistant Leader, joined the Unit in March 1970, shortly after Dr. Donald C. Hales, the former Assistant Leader, was promoted to Leader of the South Dakota Unit. Dr. Edwin L. Cooper, Professor of Biology, is closely associated with the program and serves as faculty cooperator.

Eight graduate students are enrolled in the Unit program. Three of these received masters degrees during the year. The Unit Leader taught a course in Fish Behavior (Biology 518 and 444), which was attended by six students.

The Unit program is concerned with problems associated with fish productivity in local reservoirs, ponds and streams. Two areas of research are emphasized:

1. Fish ecology - Intrinsic and extrinsic factors which control population size; interactions between factors of density, growth, reproduction and survival; and fish behavior.

2. Aquatic ecology - The effects of natural and man-made forces on the aquatic environment, particularly the effects of acid mine drainage and domestic pollution.

For quite some time the Unit Leader has been interested in the subtle, chronic effects of pollution on fish behavior. The first phase of his study concerned the determination of baselines of behavior. Studies were conducted in a 40-foot stream aquarium in which water velocity, temperature, and light were controlled. The use of cover (opaque plastic shelters or gravel substrate) and activity were measured for 3 species of fishes; blacknose dace, longnose dace and slimy sculpin. From the observed high use of cover by longnose dace and slimy sculpin, it appears that both species will be useful as test animals to bioassay chronic toxicity of acid waters.

TABLE 19. --Unit students, degrees sought, and project subjects

Student	Degree	Subject
Berliner, Daniel S.	*M.Ed.	The diameter and weight of eye lenses as criteria for a stunted condition of centrarchids
Crawford, J. Kent	M.S.	Response of smallmouth bass, Micropterus dolomieui, to cover as a bioassay for chronic toxicity
Ellis, Robert	Ph.D.	The influence of food abundance on the regulation of brook trout biomass and production in small streams
Heister, Ralph D.	D.Ed.	A study of the relationship between chemical water quality and fish and benthic diversity on French Creek, Chester County, Pennsylvania
Kimmel, William G.	*M.S.	Sensitivity of selected insect species to depressed levels of pH
Klauda, Ronald J.	Ph.D.	A quantitative analysis of the behavioral repertoire of stream-dwelling smallmouth bass, Micropterus dolomieui
McLaren, James B.	M.S.	Long-term survival of hooked and released wild brown trout in their natural environment
Thrush, William R.	*M.Ed.	The responses to light and two features of the substrate by the stonefly nymph (Plecoptera) Pteronarcys proteus Newman

1979

The following are summaries of completed theses:

Daniel S. Berliner, M.Ed., 1969

The Diameter of the Eye Lenses as Criteria for a Stunted Condition of Centrarchids

Collections were obtained of bluegills, pumpkinseeds and their hybrids from a high density (16,319/acre) "stunted" population in a pond in Huntingdon County, and of bluegills from a more normal, lower density (4,958/acre) population in a pond in Centre County, Pennsylvania. Condition factors, scales, head lengths, total lengths, diameter of eye sockets and diameter and weight of eye lens were obtained. A high correlation existed between diameter and weight of the eye lens in all fish examined and afforded the best common morphometric denominator. Fish from the high density population formed two statistically distinct groups, one with small "normal" sized eye lenses in proportion to head length and one with larger eye lenses. Fish from the large eye lens group were characterized by atypical length-weight relationships, excessive scale resorption, and a poor coefficient of condition factor. A good correlation between size of eye lens and length of head in fish with normal sized eyes indicates that growth was proportional between these body parts. The high positive correlation between the diameter and weight of the eye lens most likely indicates that the density of protein material of the eye lens does not change appreciably during growth. It appears that the eye lens continues to grow regardless of growth conditions or other morphometric changes in growth and, therefore, can be used to indicate poor growth in populations of centrarchids.

William G. Kimmel, M.S., 1970

The Acute Toxicity of Low pH to Aquatic Insects of the Orders Ephemeroptera, Plecoptera, Odonata, and Megaloptera

Drainage from strip and deep mines has resulted in acid pollution of 3,000 miles of Pennsylvania streams. Its effects are particularly damaging in soft water streams which have little buffering capacity. In streams polluted with mine acid there is a notable decrease in the insect fauna. The deleterious effects of acid pollution on aquatic insect populations may range from selective depletion of specific species at certain levels of pollution to the virtual elimination of all effective insect populations at increased levels. A continuous-flow bioassay system was developed to simulate the pollution of a soft water stream by sulphuric acid components of mine effluents. The apparatus was constructed of two controlled subsystems, one for delivery of water and the other for delivery of dilute sulphuric acid to maintain predetermined levels of pH in the test chambers. Five species representing four insect orders were chosen as typical representatives of the benthic community of a soft water stream. A 96-hour TLm, that concentration of sulphuric acid at which 50% of the test animals were killed, was used to measure the acute toxicity for each species. Groups of 10 insects were exposed to controlled pH levels for 96 hours and the number of survivors compared to that of a control group held in the test apparatus at pH 7.1. Test groups were exposed to each one-half pH unit from 6.5 to 1.0. Mortalities were insignificant for all species exposed for four days in pH levels from 6.5 to near 4.0. The 96-hour TLm values ranged from 3.31 for the most sensitive insects, Stenonema sp., to 1.72 for the most tolerant insects, Nigronia fasciata. Sensitivity appeared to increase during ecdysis for all species.

William R. Thrust, M.Ed., 1969

The Responses to Light and Two Features of the Substrate by the Stonefly Nymph (Plecoptera) Pteronarcys proteus Newman

The responses of the stonefly nymph Pteronarcys proteus Newman to physical factors of cover, illumination, and substrate color and roughness were studied in the laboratory. Experiments were conducted in a circular tank with a diameter of 63 cm. Water was

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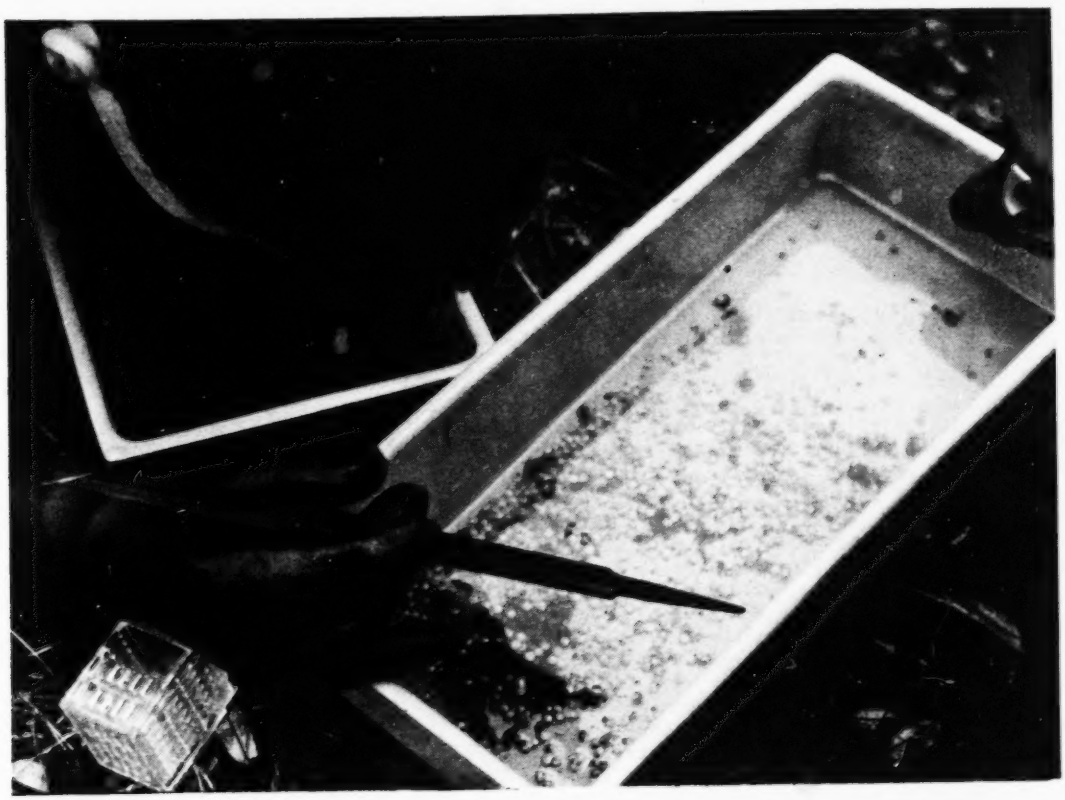
maintained at a depth of 22 cm. The tank bottom consisted of four types of substrate; black rough, black smooth, white rough, and white smooth in four equal sections. The test tank was covered with black plastic sheeting to exclude exterior light; illumination was provided by a single 60 watt light bulb. Artificial plastic shelters were placed in the test tank during one series of tests to assess the response of the stoneflies to cover. Stonefly nymphs collected from a small spring-fed stream were acclimated for three days in the test tank prior to each test. At the beginning of each test 17 nymphs were placed in the center of the tank permitting them an equal choice of habitats. In lighted tests Pteronarcys proteus nymphs preferred the black rough substrate ($P < .01$). When coverts were introduced, the nymphs used them extensively; 88% utilized the coverts. In darkness the nymphs were equally distributed over black and white substrates, but there was no significant change in their preference for coverts or a rough surface.



Pennsylvania Unit student, Richard Cole, examining trout eggs in one of the Vibert boxes planted in Spring Creek. The boxes were planted in appropriate gravels above, within, and below the source of sewage pollution to determine the effects on the eggs.

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SOUTH DAKOTA COOPERATIVE FISHERY UNIT

The South Dakota Cooperative Fishery Unit is located at the State University at Brookings. Dr. Donald C. Hales became Unit Leader in January 1970. Prior to his appointment, the Assistant Leader, Mr. Richard L. Applegate, had been the Acting Unit Leader.

Four graduate students were enrolled in the Unit during 1969-1970. All are working toward the degree of M.S.

Unit research focuses on the ecology of the highly productive lakes of eastern South Dakota. In Lake Poinsett the Assistant Leader continued survey of the particulate and dissolved organic carbon and started a study of the ecology of Corixidae and their contribution to the fishery forage base.

TABLE 20. --Unit students, degrees sought, and project subject

Student	Degree	Subject
Repsys, Andrew J.	M.S.	Food selectivity of the black bullhead in Lake Poinsett
Skille, Jack M.	M.S.	Nutrient transport in the Big Sioux River Lake Poinsett complex
Smith, Stephen B.	M.S.	Benthos populations of Lake Poinsett
Swanson, Alan R.	M.S.	An evaluation of fish shelters in Lake Poinsett
Unit Cooperator advised:		
Gengerke, Tom W.	M.S.	Food electivity of selected species of fish in Blue Cloud Abbey Pond
Hill, Kay R.	*M.S.	Feeding of black bullheads in experimental cages
Hauber, Alan B.	M.S.	Comparison of algal populations in Lake Herman and Enemy Swim
Unkenholz, Dennis G.	M.S.	Food electivity of selected species of fish in Labolt Pond

*Graduated

Abstract of completed thesis:

Kay R. Hill, M.S. 1970

Feeding of Black Bullheads in Experimental Cages

Black bullheads, Ictalurus melas (Rafinesque), were grown experimentally from July 25, 1969, through October 21, 1969. The fish, collected from Lake Poinsett, were grown in five cages each with a water volume of 2.6 m^3 and five cages each with a volume of 3.86 m^3. No significant difference in fish growth between the two cage sizes was observed. Fish in large cages gained 204.4 Kg and were fed 1550.8 Kg of food, for a food conversion factor of 6.60. Fish in smaller cages gained 133.5 Kg and were fed 924.5 Kg of food with a resultant food conversion factor of 6.92. Over 75 percent of total gain occurred while water temperatures were between 23 and 24 C. More desirable food conversion factors were obtained when water temperature was above 23 C (2.3 - 9.0) than when water temperature was below 23 C (1.14 - 20.1). One hundred seventy-two fish (3.6 percent) died in the larger cages while 137 (2.8 percent) fish died in the small cages. Of the 309 total dead, 76.3 percent died the first two weeks. No significant difference in fish condition between the two cage sizes was observed. The mean condition factor was 1.784 for the fish in the smaller cages and 1.766 for the fish in the larger cages. Fish were produced slightly more economically in the larger cages ($1.01/Kg) than in the smaller cages ($1.05/Kg).

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UTAH COOPERATIVE FISHERY UNIT

Located at Utah State University in Logan, the Cooperative Fishery Unit is under the direction of Dr. Robert H. Kramer, assisted by Dr. Clair B. Stalnaker. The Unit program emphasizes research in the following areas:

1. Fitness of hatchery trout
2. Ecology of stream-drift invertebrates
3. Genetic studies of fish populations
4. Serum enzyme polymorphisms in rainbow trout
5. The biological impact of reservoir developments on the Colorado River system
6. Early life history of Utah fishes

In 1969-1970 the Unit supported 7 graduate students, one of whom received the degree of M.S. Unit staff also taught 3 courses in the fisheries field attended by a total of 63 students.

Drs. Kramer and Stalnaker continued their research. Dr. Kramer is evaluating the use of learning behavior of stocked trout as an index of their survivability. He is also developing techniques for the laboratory culture of mountain whitefish. Dr. Stalnaker is developing methods for identification of fish genotypes through tests with blood serum enzymes and proteins.

TABLE 21.--Unit students, degrees sought, and project subject

Student	Degree	Subject
Arnette, Joseph L.	Ph.D.	An electrophoretic comparison of serum proteins from selected strains of rainbow trout
Bricker, Marlin J.	*M.S.	Effects of starvation and time of stocking on survival of stocked rainbow trout
Brown, Larry G.	M.S.	Early life history of mountain whitefish
Holden, Paul B.	Ph.D.	Systematic and ecological studies of native Colorado River basin fishes
Kahnle, Andrew W.	M.S.	Effects of exercise on scope-for-activity of rainbow trout
Miller, Kent D.	M.S.	Spawning and year-class formation of largemouth bass and food habits of young-of-the-year in Lake Powell
Pearson, William D.	Ph.D.	Drift rates of a caddisfly and a mayfly in Temple Fork of the Logan River

*Graduated

The following is an abstract of a completed thesis.

Marlin J. Bricker, M.S., 1970

Effects of Starvation and Time at Stocking on Survival of Stocked Rainbow Trout, Salmo gairdneri

Investigations of effects of starvation and time at stocking on the survival of catchable rainbow trout in two areas of Mammoth Creek in Dixie National Forest, Utah, were conducted from May 24 to December 6, 1969. Fish were starved for 6 days and 1 day and stocked in the morning (5:40-7:00 a.m.) and in the afternoon (1:45-5:30 p.m.). Out of 7,000 tagged fish stocked, 4,751 tags were returned by fishermen. The 6-day starved fish, stocked in the morning returned to the creel in highest numbers (1,240); followed by 1-day starved, afternoon-stocked fish (1,194); 6-day starved, afternoon-stocked fish (1,163); and 1-day starved, morning-stocked fish (1,154). For the entire stream, the

main effects of starvation and time at stocking were not significant at the 10 percent level, but their interaction was significant at the 1 percent level. In the upper area, however, both 6-day-starved lots returned to the creel in greater numbers (692) than the 1-day-starved lots (643) and the main effect of starvation was significant at the 1 percent level in addition to the interaction being significant at the 5 percent level. About 81 percent of the tags returned were from fish caught in the sections stocked. One percent of the tags were from fish that moved upstream and 18 percent from fish that moved approximately 3 miles or less downstream. No consistent downstream movement patterns were related to either starvation or time at stocking. One week after the fishing season, 68 percent of all (19) tagged fish captured by electrofishing were 6-day starved fish, but this difference was not significant at the 10 percent level.

Artificial spawning of mountain whitefish, Prosopium williamsoni, at the Utah Cooperative Fishery Unit. Dr. Robert Kramer, Unit Leader, is developing techniques for laboratory culture of this species.

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VIRGINIA COOPERATIVE FISHERY UNIT

The Virginia Cooperative Fishery Unit is located at Virginia Polytechnic Institute and State University in Blacksburg. Dr. Kenneth B. Cumming is the Unit Leader and Mr. Ray Don Estes, the Assistant Leader.

Unit research centers on long-term effects of selected environmental factors on native and introduced fish populations. Within the program the Leader is exploring time-saving methods for determination of heavy metal concentrations in fish tissues. The Assistant Leader continued his studies to evaluate the effects of water level fluctuations on centrarchid recruitment in a pumped-storage reservoir.

Six graduate students worked toward degrees in the Unit program, 2 receiving degrees during the period. A total of 54 University students enrolled in 3 courses presented by the Leader. He also instructed 25 TVA employees in Project Update.

TABLE 22.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Bureau Staff advised:		
Estes, R. Don	Ph.D.	Pump-storage effects on centrarchid recruitment
Hill, Donley M.	Ph.D.	Faunal recovery after strip mine reclamation
O'Rear, Charles W., Jr.	Ph.D.	Copper and zinc toxicity to striped bass
Roland, John V.	*M.S.	Hard water additions to soft water lakes
Smith, Alphonso O.	Ph.D.	Gizzard shad metabolism
Sumner, Robert E.	*M.S.	Artificial liming of a fishing lake
Unit Cooperator advised:		
Holmes, Donald W.	M.S.	Pilot studies on catfish farming
Humphries, E. Terry	Ph.D.	Striped bass nutrition

*Graduated

The following are abstracts of completed theses:

John V. Roland, M.S., 1969

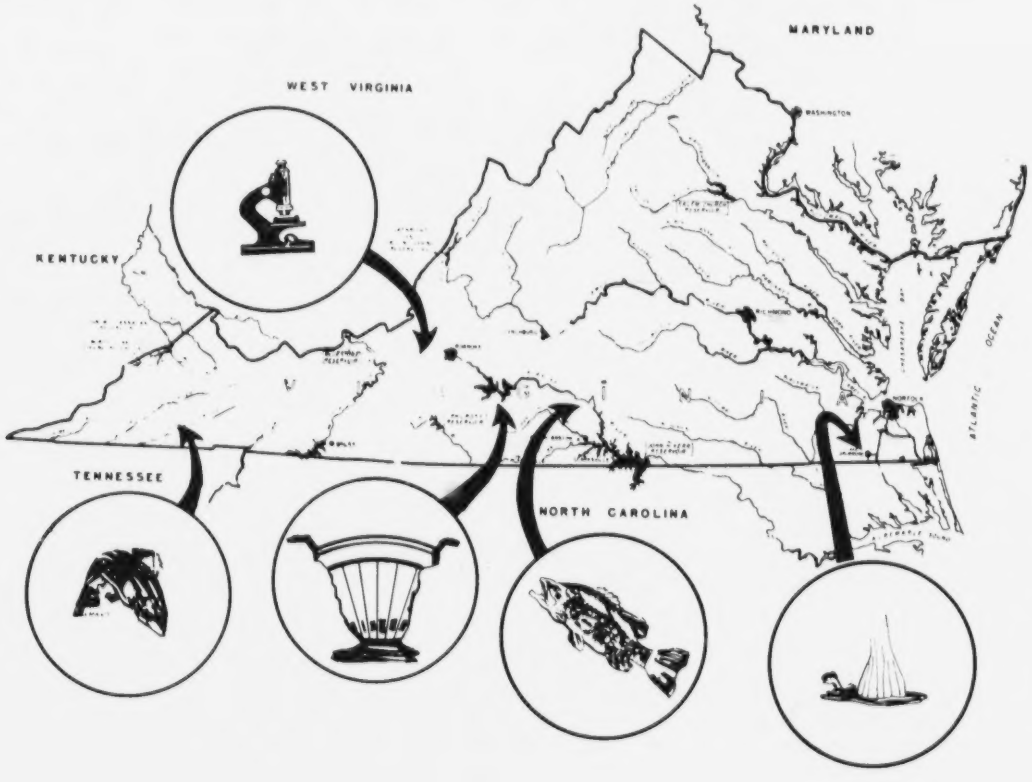
Some Effects of the Recent Introduction of Hard Water Into the Water Supply Reservoir of Carvin Cove, Virginia

In November 1966, Tinker Creek, a hard water stream was introduced into Carvin Cove Reservoir, a very infertile, water-supply reservoir. This provided an excellent opportunity to study some of the interactions between fish productivity and water quality. Physiochemical conditions were monitored in the reservoir from 1965 to 1968 by the Roanoke City Water Department. These records demonstrated that a significant water quality alteration resulted from the addition of Tinker Creek water. Total hardness and alkalinity increased from 10 - 20 ppm in 1965 and 1966 to 50 - 60 ppm by the end of 1968. The pH, which averaged about 6.8 before the hard water introduction, increased to about 7.6 in 1968. The hard water introduction caused variations in the physiochemical conditions of different areas of the reservoir during 1968. Waters nearest the hard water inflow ranged somewhat higher in dissolved nutrients. Bottom fauna distribution and abundance was affected. Greater concentrations of macrobenthic organisms were found in the area nearest the Tinker Creek inflow. High concentrations of fish, especially gizzard shad and white suckers, were found in the area near the hard water inflow. Length-weight relationships and condition indices suggest that bluegills and bullheads were in better physical shape in 1968 than they were in 1951. An age and growth study on the white sucker, Catostomus commersoni, indicated that growth rates had doubled after the Tinker Creek water was added.

Robert E. Sumner, M.S., 1970

Water Quality and Productivity Changes Associated
With the Liming of a Soft Water Lake

Sherwood Lake, a 165-acre public fishing impoundment in Greenbrier County, West Virginia, was treated with calcium carbonate for 4 years. The limestone treatment was done by revolving limestone drums installed above the lake on Meadow Creek. The limestone drum provided continuous treatment throughout the period. Limnological conditions of Meadow Creek and Sherwood Lake were monitored throughout the treatment period. Physiochemical and plankton data were collected monthly and the fish population sampled annually. The water quality of Sherwood Lake improved gradually during treatment, however, by the end of 1968 the lake could only be classified as a soft water lake. The growth of Elodea was encouraged by the addition of limestone. A lack of available nutrients and decreased productivity at higher trophic levels were attributed to the dense growths of Elodea. The mean annual volume of plankton decreased during lime treatment; however, this decrease was attributed to the usurping of available nutrients by higher aquatic plants. Low concentrations of available phosphorus was considered to be the major chemical factor limiting biological production. No significant growth increments were evident for any species of fish of any age that could be attributed directly to the limestone treatment of Sherwood Lake. An increase in the standing crop of fish was noted but could not be ascribed entirely to the addition of limestone.



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WASHINGTON COOPERATIVE FISHERY UNIT

The Washington Cooperative Fishery Unit is located in the College of Fisheries, University of Washington, Seattle. Dr. Richard W. Whitney, the Unit Leader, has been with the Unit since its start in August 1967. The Assistant Leader, Dr. Richard S. Wydoski, transferred from the Oregon Unit in May 1969.

The Fisheries Center is located on the southern edge of the campus on the Ship Canal, which connects the saltwater of Puget Sound with the freshwaters of Lakes Union and Washington. This geographic location provides an opportunity to do research in many types of waters - ocean, Puget Sound, estuaries, streams, reservoirs, and lowland and highland lakes.

During the school year, the Unit Leader taught a course in the Principles of Management of Natural Resources to 46 students. The Assistant Leader taught a course on the Introduction to Fisheries and Food Science Literature to 12 students. Unit staff members supervised 6 undergraduate and 5 graduate students including 1 student who received his Ph.D. degree.

The Unit Leader carried out a study on the timing of American shad runs as related to water temperature.

The Assistant Leader is working on studies of the biology and sport potential of several estuarine and inshore marine fishes and on the fecundity of coastal cutthroat trout.

A combined Unit staff study is being made on the inland fishes of Washington.

TABLE 23.--Unit students, degrees sought, and project subjects

Student	Degree	Subject
Allee, Brian J.	Ph.D.	A study of the behavioral interactions between Coho salmon and steelhead trout
Andersen, Aven M.	Ph.D.	A study of the geoduck clam
Braaten, Duane O.	*Ph.D.	Characteristics and angling desires of western Washington trout anglers and a simulation of the fishery-management system so as to optimize angler enjoyment
Stein, Jeffrey N.	M.S.	A study of the largemouth bass population in Lake Washington
Sylvester, Joseph R.	Ph.D.	Effect of thermal shock on a predator-prey interaction

*Graduated

The following is a thesis abstract for work completed:

Duane O. Braaten, Ph.D, 1970

Characteristics and Angling Desires of Western Washington Trout Anglers, and a Simulation of the Fishery-Management System so as to Optimize Angler Enjoyment

The objectives of this study were to describe quantitatively trout fishing participation and catch in Washington lakes by King County anglers (near the urban center of the State), to establish on the basis of user opinions some parameters of quality fishing experience, and then to develop a stocking policy for catchable trout to optimize these factors for given expenditure levels of the Department of Game. Principal sources of data were a mailed questionnaire and two follow-ups sent to 6,000 anglers, a logbook used by 400 of them, and interviews with management and academic personnel. Research analysis used packaged computer programs for cross-classification of variables and data description. A stepwise regression was used for determining the best predictor of satisfactory fishing.

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A computer simulation of the fishery-management system was used to integrate angler desires with management capabilities to determine the best size at which to plant catchable-size trout. Anglers were found to have better than average income and education. The average trip to fish for trout in lakes was nearly 100 miles one way, and most often involved bait as a lure. Effort is spread fairly well throughout the season. Opening day use is on the decline. When anglers' evaluations of length and number trade-offs were integrated in the computer model with hatchery and management capabilities, it was determined that the Department of Game could obtain increased benefits for anglers if catchable-size trout in lakes (presently hatchery-reared to 8 to 9 inches) were reared to 11 inches.

Washington Unit student, Aven Anderson, and assistant measuring geoduck clam dug by onlooking sport fisherman.

Appendix A. --Unit Addresses, Personnel, and Coordinating Committee Members

In the following list, an asterisk preceding "*Unit Leader" indicates that he is a member of the Coordinating Committee. The following are other Bureau of Sport Fisheries and Wildlife Coordinating Committee members:

Units - California, Hawaii, Idaho, Montana, Oregon and Washington
Mr. Jack E. Hemphill, Assistant Regional Director, Region 1, Portland, Oregon

Units - Arizona, Colorado, Oklahoma and Utah
Mr. Robert F. Stephens, Assistant Regional Director, Region 2, Albuquerque, New Mexico

Units - Iowa, Missouri, Ohio and South Dakota
Mr. Samuel E. Jorgensen, Assistant Regional Director, Region 3, Twin Cities, Minnesota

Units - Alabama, Georgia, Louisiana, North Carolina and Virginia
Mr. Ernest C. Martin, Assistant Regional Director, Region 4, Atlanta, Georgia

Units - Maine, Massachusetts, New York and Pennsylvania
Mr. Richard E. Griffith, Regional Director, Region 5, Boston, Massachusetts

ALABAMA Cooperative Fishery Unit, Fisheries Building
Auburn University, Auburn, Alabama 36830

Unit Leader: Dr. John S. Ramsey; Assistant Leader: Mr. James M. Barkuloo
Other Coordinating Committee members: Dr. E.V. Smith, Dean, School of Agriculture and Director of the Agricultural Experiment Station, Auburn University
Mr. Charles D. Kelley, Chief, Division of Game and Fish, Department of Conservation, Montgomery, Alabama

ARIZONA Cooperative Fishery Unit, Room 302, Old Psychology Building
University of Arizona, Tucson, Arizona 85721

Unit Leader: Dr. William J. McConnell; Assistant Leader: Mr. Charles D. Ziebell
Other Coordinating Committee members: Dr. Albert Weaver, Associate Dean, College of Liberal Arts, University of Arizona
Mr. Howard M. Bassett, Chief of Fisheries, Game and Fish Department, Phoenix, Arizona

CALIFORNIA Cooperative Fishery Unit, Fisheries Department
Humboldt State College, Arcata, California 95521

*Unit Leader: Dr. Roger A. Barnhart; Assistant Leader: Dr. Charles F. Bryan
Other Coordinating Committee members: Dr. George H. Allen, Professor, Fisheries Department, Humboldt State College
Dr. Alexander J. Calhoun, Chief of Inland Fisheries, Department of Fish and Game, Sacramento, California

COLORADO Cooperative Fishery Unit, Room 102, Cooperative Units Building
Colorado State University, Fort Collins, Colorado 80521

*Unit Leader: Dr. Robert E. Vincent; Assistant Leader: Dr. Robert J. Behnke
Other Coordinating Committee members: Dr. Gustav A. Swanson, Head, Department of Fishery and Wildlife Biology, Colorado State University
Mr. Robert L. Evans, Assistant Director, Division of Game, Fish and Parks, Denver, Colorado

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GEORGIA Cooperative Fishery Unit, School of Forestry
University of Georgia, Athens, Georgia 30601

*Unit Leader: Dr. Alfred C. Fox; Assistant Leader: Mr. James P. Clugston
Other Coordinating Committee members: Dr. A. M. Herrick, Dean, School of Forest Resources, University of Georgia
Mr. Leon Kirkland, Chief of Fisheries, State Game and Fish Commission, Atlanta, Georgia

HAWAII Cooperative Fishery Unit, 2538 The Mall
University of Hawaii, Honolulu, Hawaii 96822

*Unit Leader: Dr. John A. Maciolek
Other Coordinating Committee members: Dr. Vernon E. Brock, Director, Institute of Marine Biology, University of Hawaii
Mr. Michio Takata, Director, Division of Fish and Game, Honolulu

IDAHO Cooperative Fishery Unit, College of Forestry - Wildlife Management
University of Idaho, Moscow, Idaho 83843

*Unit Leader: Dr. Donald W. Chapman; Assistant Leader: Dr. Theodore C. Bjornn
Other Coordinating Committee members: Dr. Ernest Wohletz, Dean, College of Forestry, University of Idaho
Mr. John R. Woodworth, Director, Fish and Game Department, Boise, Idaho

IOWA Cooperative Fishery Unit, 80 Science Hall
Iowa State University, Ames, Iowa 50010

*Unit Leader: Dr. Robert J. Muncy; Assistant Leader: Dr. Ross V. Bulkley
Other Coordinating Committee members: Dr. Kenneth D. Carlander, Professor, Department of Fish and Wildlife, Iowa State University
Mr. Harry M. Harrison, Superintendent of Biology, State Conservation Commission, Des Moines

LOUISIANA Cooperative Fishery Unit, Room 201, Forestry Building
Louisiana State University, Baton Rouge, Louisiana 70803

*Unit Leader: Dr. Jerry C. Tash; Assistant Leader: Mr. William H. Herke
Other Coordinating Committee members: Dr. J. Norman Efferson, Dean, College of Agriculture, Louisiana State University
Mr. Joe L. Herring, Chief, Division of Fish and Game, Wild Life and Fisheries Commission, New Orleans, Louisiana

MAINE Cooperative Fishery Unit, Department of Zoology
University of Maine, Orono, Maine 04473

*Unit Leader: Dr. Richard W. Hatch; Assistant Leader: Dr. Richard W. Gregory
Other Coordinating Committee members: Dr. Kenneth W. Allen, Head, Department of Zoology, University of Maine
Mr. Lyndon H. Bond, Chief, Fishery Research and Management Division, Department of Inland Fisheries and Game, Augusta, Maine

MASSACHUSETTS Cooperative Fishery Unit, Holdworth Hall
University of Massachusetts, Amherst, Massachusetts 01002

*Unit Leader: Dr. James A. McCann; Assistant Leader: Dr. Roger J. Reed
Other Coordinating Committee members: Mr. Arnold D. Rhodes, Head, Department of Forestry and Wildlife, University of Massachusetts
Dr. Charles F. Cole, Associate Professor, Department of Forestry and Wildlife, University of Massachusetts

Mr. Colton H. Bridges, Superintendent, Wildlife Research and Development, Division of Fisheries and Game, Boston
Mr. Irwin M. Alperin, Assistant Director, Division of Marine Fisheries, Department of Natural Resources, Boston

MISSOURI Cooperative Fishery Unit, Stephens Hall
University of Missouri, Columbia, Missouri 65201

*Unit Leader: Dr. Richard O. Anderson; Assistant Leader: Dr. Daniel W. Coble
Other Coordinating Committee members: Dr. Robert S. Campbell, Professor, Department of Zoology, University of Missouri
Mr. Paul G. Barnickol, Assistant Director, Department of Conservation, Jefferson City Missouri

MONTANA Cooperative Fishery Unit, Department of Zoology and Entomology
Montana State University, Bozeman, Montana 59715

*Unit Leader: Dr. Richard J. Graham; Assistant Leader: Dr. William R. Gould, Jr.
Other Coordinating Committee members: Dr. C.J.D. Brown, Professor, Department of Zoology and Entomology, Montana State University
Mr. Arthur N. Whitney, Chief of Fisheries Management, Fish and Game Department, Helena Montana

NEW YORK Cooperative Fishery Unit, Fernow Hall
Cornell University, Ithaca, New York 14850

*Unit Leader: Dr. Alfred W. Eipper; Assistant Leader: Dr. Clarence A. Carlson, Jr.
Other Coordinatng Committee members: Dr. Dwight A. Webster, Head, Department of Conservation, Cornell University
Mr. William G. Bentley, Assistant Director, Fish and Game Division, Conservation Department, Albany, New York

NORTH CAROLINA Cooperative Fishery Unit, Box 5577 (4105 Gardner Hall)
North Carolina State University, Raleigh, North Carolina 27607

*Unit Leader: Dr. F. Eugene Hester; Assistant Leader: Mr. Robert E. Stevens
Other Coordinating Committee members: Dr. J. Lawrence Apple, Director, Institute of Biological Sciences and Assistant Director, Agricultural Experiment Station, North Carolina State University
Dr. David E. Davis, Head, Department of Zoology, North Carolina State University

OHIO Cooperative Fishery Unit, 1735 Neil Avenue
Ohio State University, Columbus, Ohio 43210

*Unit Leader: Dr. Richard A. Tubb; Assistant Leader: Mr. Stephen H. Taub
Other Coordinating Committee members: Dr. Tony J. Peterle, Chairman, Faculty of Population and Environmental Biology, and Professor, College of Biological Sciences, Ohio State University
Mr. Clarence F. Clark, Assistant Supervisor of Research, Ohio Division of Wildlife, Columbus (January 68 - June 69)
Mr. D. Barry Apgear, Supervisor of Fishery Research, Ohio Division of Wildlife

OKLAHOMA Cooperative Fishery Unit, Room 406, Life Sciences Building
Oklahoma State University, Stillwater, Oklahoma 74074

*Unit Leader: Dr. Robert C. Summerfelt; Assistant Leader: Dr. Bradford E. Brown
Other Coordinating Committee members: Dr. Marvin T. Edmison, Director, Research Foundation, Oklahoma State University

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Mr. Farrell Copelin, Director, Department of Wildlife Conservation, Oklahoma City

OREGON Cooperative Fishery Unit, Department of Fisheries and Wildlife, Extension Hall
Oregon State University, Corvallis, Oregon 97331

*Unit Leader: Dr. Raymond C. Simon
Other Coordinatiag Committee members: Dr. Howard F. Horton, Professor, Department of Fisheries and Wildlife, Oregon State University
Mr. Wallace F. Hublou, Director of Research, Oregon Fish Commission, Portland
Dr. H. J. Rayner, Chief, Research Division, Oregon Game Commission, Portland

PENNSYLVANIA Cooperative Fishery Unit, Department of Zoology-208 Life Science Building
Pennsylvania State University, University Park, Pennsylvania 16802

*Unit Leader: Dr. Robert L. Butler; Assistant Leader: Dr. Robert F. Raleigh
Other Coordinating Committee members: Dr. Robert Flipse, Associate Director, Agriculture Experiment Station, Pennsylvania State University
Mr. Robert J. Bielo, Executive Director, Pennsylvania Fish Commission, Harrisburg

SOUTH DAKOTA Cooperative Fishery Unit, Department of Wildlife Management
South Dakota State University, Brookings, South Dakota 57006

*Unit Leader: Dr. Donald C. Hales; Assistant Leader: Mr. Richard L. Applegate
Other Coordinating Committee members: Dr. Duane Acker, Dean, College of Agriculture and Biological Sciences, South Dakota State University
Mr. Robert A. Hodgins, Director, Department of Game, Fish and Parks, Pierre, South Dakota

UTAH Cooperative Fishery Unit
Utah State University, Logan, Utah 84321

*Unit Leader: Dr. Robert H. Kramer; Assistant Leader: Dr. Clair B. Stalnaker
Other Coordinating Committee members: Dr. William F. Sigler, Head, Wildlife Resources Department, Utah State University
Mr. John E. Phelps, Director, Fish and Game Division, Salt Lake City, Utah

VIRGINIA Cooperative Fishery Unit
Virginia Polytechnic Institute, Blacksburg, Virginia 24060

*Unit Leader: Dr. Kenneth B. Cumming; Assistant Leader: Mr. Ray Don Estes
Other Coordinating Committee members: Dr. John F. Hosner, Head, Department of Forestry and Wildlife, Virginia Polytechnic Institute
Mr. Jack M. Hoffman, Chief, Fish Division, Commission of Game and Inland Fisheries, Richmond, Virginia

WASHINGTON Cooperative Fishery Unit, College of Fisheries
University of Washington, Seattle, Washington 98105

*Unit Leader: Dr. Richard R. Whitney; Assistant Leader: Dr. Richard S. Wydoski
Other Coordinating Committee members: Dr. Richard Van Cleave, Dean, College of Fisheries, University of Washington
Mr. Donald E. Kauffman, Supervisor, Division of Research, Washington Department of Fisheries, Olympia
Mr. Cliff J. Millenbach, Chief, Division of Fishery Management, Washington Department of Game, Olympia

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Appendix B.-- Publications of Unit Staff and Students

Adams, G.G.
1970. Soluble carbohydrates as a factor influencing gross primary productivity and bacterial populations in lakes. Journal, Arizona Academy of Science, vol. 6, no. 1, p. 71-77.

Andrews, A.K.
1970. Squamation chronology of the fathead minnow, Pimephales promelas. Transactions, American Fisheries Society, vol. 99, no. 2, p. 429-432.

Anderson, R.D. and C.F. Bryan
1970. Age and growth of three surfperches (Embiotocidae) from Humboldt Bay, California. Transactions, American Fisheries Society, vol. 99, no. 3, p. 475-483.

Applegate, R.L. and J.W. Mullan
1969. Ecology of Daphnia in Bull Shoals Reservoir. Research Report, Bureau of Sport Fisheries and Wildlife, no. 74, 23 p.

Barkuloo, J.M.
1970. Taxonomic status and reproduction of striped bass (Morone saxatilis) in Florida. Technical Paper 44, Bureau of Sport Fisheries and Wildlife, 16 p.

Barnhart, R.A.
1970. A happy story - the Hat Creek wild trout project. Outdoor California, vol. 34, no. 2, p. 17-19.

Behmer, D.J.
1969. Schooling of river carpsuckers and a population estimate. Transactions, American Fisheries Society, vol. 98, no. 3, p. 520-523.

Behmer, D.J.
1969. A method of estimating fecundity; with data on river carpsuckers, Carpiodes carpio. Transactions, American Fisheries Society, vol. 98, no. 3, p. 523-524.

Behnke, R.J.
1970. The application of cytogenic and biochemical systematics to phylogenic problems in the family Salmonidae. Transactions, American Fisheries Society, vol. 99, no. 1, p. 237-248.

Brezina, E.R., R.S. Campbell and J.R. Whitley
1970. Thermal discharge and water quality in a 1,500-acre reservoir. Journal, Water Pollution Control Federation, vol. 42, no. 1, p. 24-32.

Brown, B.E.
1970. Comparison of measures of catch rates of selective fishermen in an Oklahoma survey. Progressive Fish-Culturist, vol. 32, no 3, p. 147-152.

Brown, B.E., I. Inman and A. Jearld, Jr.
1970. Schooling and shelter-seeking tendencies in fingerling channel catfish. Transactions, American Fisheries Society, vol. 99, no. 3, p. 540-545.

Bulkley, R.V.
1969. A furunculosis epizootic in Clear Lake yellow bass. Proceedings, Annual Conference Bulletin, Wildlife Disease Association, vol. 5, no. 3, p. 322-327.

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Bulkley, R.V.
1970. Fluctuations in abundance and distribution of common Clear Lake fishes as suggested by gill net catch. Iowa State Journal of Science, vol. 44, no. 4, p. 413-422.

Bulkley, R.V. and J.A. Schneider
1970. Abundance estimates of selected zooplankton species in Clear Lake, Iowa, by two sampling methods. Iowa State Journal of Science, vol. 44, no. 3, p. 405-410.

Bulow, F.J.
1970. Biochemical indicators of recent growth of fishes: RNA and DNA (Abstract). American Fish Farmer, vol. 1, no. 2, p. 22.

Bulow, F.J. and R.T. Muncy
1970. An inexpensive shaking apparatus. Turtox News, vol. 48, no. 1, p. 22-23.

Campbell, R.S. and O.T. Lind
1969. Water quality and aging of strip mine lakes. Journal, Water Pollution Control Federation, vol. 41, no. 11, p. 1943-1955.

Carlander, K.D.
1969. Handbook of freshwater biology. Volume I. Iowa State University Press, 752 p.

Carlander, K.D.
1969. An operational-functional classification of fishery management techniques. Verhandlungen der Internationalen Vereinigung für Theoretische und Angewandte Limnologie, vol. 17, p. 636-640.

Carlander, K.D.
1969. Predredging studies at Fort Madison, Iowa (Summary Report). Transactions, Mississippi River Consortium. Wisconsin State University, LaCrosse, no. 2, p. 19.

Carlson, F.T. and J.A. McCann
1969. Report on the biological findings of the Hudson River fisheries investigations, 1965-1968. New York State Conservation Department, p. 6-80.

Coble, D.W.
1970. False annulus formation in bluegill scales. Transactions, American Fisheries Society, vol. 99, no. 2, p. 363-368.

Coble, D.W.
1970. Vulnerability of fathead minnows infected with yellow grub to largemouth bass predation. Journal of Parasitology, vol. 56, no. 2, p. 395-396.

Cohen, M. and B.E. Brown
1969. Scale and body growth of young-of-year centrarchids in two Oklahoma farm ponds. Oklahoma Academy of Science, vol. 48, p. 199-205.

Craven, R.E. and B.E. Brown
1969. Ecology of Hexagenia naiads (Insecta - Ephemeridae) in an Oklahoma reservoir. American Midland Naturalist, vol. 82, no. 2, p. 346-358.

Craven, R.E. and B.E. Brown
1969. Benthic macroinvertebrates of Boomer Lake, Payne County, Oklahoma. Southwestern Naturalist, vol. 14, no. 2, p. 221-230.

Craven, R.E. and B.E. Brown
1970. Power plant heated discharge water and benthos in Boomer Lake, Payne County, Oklahoma. Journal, Kansas Entomological Society, vol. 43, no. 2, p. 122-128.

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Cumming, K.B. and R.D. Estes
1969. Some water quality aspects of the upper Roanoke River basin with special emphasis on temperature. Water Resources Research Center, Virginia Polytechnic Institute, Blacksburg, 66 p.

Eipper, A.W.
1969. The heat is on. Science Year. Field Enterprises Educational Corporation, Chicago.

Eipper, A.W.
1970. A multiple approach to water management planning. Extension Series, Cornell Department of Conservation, no. 1, p. 1-5.

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Appendix C.--The Act Authorizing Cooperative Fishery Units

Public Law 86-686
86th Congress, S. 1781
September 2, 1960

AN ACT

74 STAT. 733.

To facilitate cooperation between the Federal Government, colleges and universities, the States, and private organizations for cooperative unit programs of research and education relating to fish and wildlife, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, for the purpose of developing adequate, coordinated, cooperative research and training programs for fish and wildlife resources, the Secretary of the Interior is authorized to continue to enter into cooperative agreements with colleges and universities, with game and fish departments of the several States, and with nonprofit organizations relating to cooperative research units: *Provided*, That Federal participation in the conduct of such cooperative unit programs shall be limited to the assignment of Department of the Interior technical personnel by the Secretary to serve at the respective units, to supply for the use of the particular units' operations such equipment as may be available to the Secretary for such purposes, and the payment of incidental expenses of Federal personnel and employees of cooperating agencies assigned to the units.

Fish and Wildlife.
Cooperative unit programs.

SEC. 2. There is authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act.

Appropriation.

Approved September 2, 1960.

U. S. GOVERNMENT PRINTING OFFICE : 1971 O - 413-325

South Dakota Unit student, Larry Kallemeyn, visiting brook trout study stream.

Arizona Unit student, Robert Hallock, sampling cattails in Imperial Reservoir to measure standing crops.

VT 019 108

VT 019 108
OCCUPATIONAL SURVEY (TITLE VI ESEA 89-10), 1970 71.

NORFOLK PUBLIC SCHOOLS, VA. SPECIAL EDUCATION DEPT.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 71 10P.

DESCRIPTORS - *OCCUPATIONAL SURVEYS; AREA STUDIES; *EMPLOYER ATTITUDES; *EDUCABLE MENTALLY HANDICAPPED; EMPLOYMENT POTENTIAL; *EMPLOYMENT OPPORTUNITIES; EMPLOYMENT PRACTICES; EMPLOYMENT PROBLEMS; EMPLOYMENT; *TRAINABLE MENTALLY HANDICAPPED
IDENTIFIERS - NORFOLK PUBLIC SCHOOLS

ABSTRACT - SUMMARIZED ARE THE RESULTS OF A SURVEY TAKEN OF EMPLOYER ATTITUDES IN 379 NORFOLK, VIRGINIA BUSINESSES IN ORDER TO AID IN THE DEVELOPMENT OF A CURRICULUM MORE ATTUNED TO THE NEEDS OF THE MENTALLY RETARDED SO AS TO HELP MINIMIZE DIFFICULTIES FACED BY THESE INDIVIDUALS IN THEIR SEARCH FOR MEANINGFUL EMPLOYMENT. TO OBTAIN DATA, THE CITY WAS DIVIDED INTO SEVERAL GEOGRAPHICAL AREAS WITH ONE OF FOUR INTERVIEWRS ASSIGNED TO EACH. QUESTIONNAIRES WERE USED TO RECORD RESPONSES. A TOTAL OF 30 HOURS WERE SPENT INTERVIEWING. FINDINGS INCLUDED: (1) OF THOSE INTERVIEWED, 201 INDICATED A WILLINGNESS TO HIRE EDUCABLE MENTALLY RETARDED, WHILE 178 RESPONDED NEGATIVELY, AND (2) APPROXIMATELY 58 DIFFERENT JOB TYPES IN SEVEN GENERAL CATEGORIES WERE FOUND TO BE AVAILABLE TO THE EDUCABLE MENTALLY RETARDED. THOSE CATEGORIES WERE: (1) FOOD SERVICES, (2) GROCERY STORE, (3) LAUNDRY, (4) PERSONAL SERVICES, (5) SERVICE WORKER, (6) THEATRE, AND (7) MISCELLANEOUS. (SN)

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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OCCUPATIONAL SURVEY

(Title VI ESEA 89-10)

1970-71

Special Education Department

Norfolk Public Schools

Norfolk, Virginia

VT019103

INTRODUCTION

When the educable mentally retarded child reaches high school, it is of utmost importance that he pursue a course which will ultimately lead to meaningful employment. For obvious reasons this task is markedly more difficult for the educable mentally retarded child than is the case for the average child. This difficulty results not only from the actual limitations of the educable mentally retarded child, but also from a number of other factors. Part of the difficulty stems from a general lack of understanding of the true nature of the educable mentally retarded child in the business community as a whole. Also adding to the difficulty faced by these children is the fact that their teachers are often unaware of exactly what the educable mentally retarded child will face as he attempts to secure meaningful employment. As a result, the child himself is not prepared for the difficult task of getting and keeping meaningful employment. Finally, parents of the educable mentally retarded are not always aware of the job limitations of their children.

In order to help reduce the previously stated problems and thereby improve the job opportunities for the educable mentally retarded, it was felt that an occupational survey encompassing the entire city of Norfolk, Virginia would be highly beneficial. Since such a survey would involve direct contact between teachers and prospective employers, it was believed that a mutual understanding of their respective problems would be gained. This understanding on the part of the teachers concerning the problems faced by the business community could be used to improve their program for preparing the educable mentally retarded for worthwhile employment. Teachers would also be better able to inform parents of the employment outlook for their children. It was also believed that such a survey could be of practical value in designating those business individuals with favorable attitudes regarding the hiring of the educable mentally retarded. In addition, it was felt that a survey would provide valuable information which could be used in determining the kinds of jobs available to the educable mentally retarded.

THE OCCUPATIONAL SURVEY

METHOD:

Prior to beginning the actual survey, the program coordinator called several meetings in order to discuss the method by which the survey would be taken. It was decided that the city would be divided into several geographical areas. These areas were assigned to the four interviewers (including the coordinator) on the basis of their familiarity with the various areas involved. To aid the interviewers in taking the survey, questionnaires and information sheets were made. The interviewer was expected to use the questionnaire as a guideline when interviewing a prospective employer. The information sheets, which outline a brief description of the work study program at Maury High School, were left with those who responded favorably to the prospect of hiring the educable mentally retarded. (See the Appendix for a sample questionnaire.)

The interviewers were expected to spend three hours per week for thirty weeks actually interviewing employers. Each interviewer was to contact the businesses in his area and arrange for an interview. Interviews could be scheduled either by telephone or in person. In most cases an appointment was unnecessary since the interview could be completed in one short visit.

When interviewing a potential employer, the interviewer attempted to explain the intent of the work study program for the educable mentally retarded. Emphasis was placed on the idea that the employer can also benefit from a program designed to aid the retarded in finding worthwhile employment. The limitations and abilities of the educable mentally retarded were frankly discussed. Above all, an attempt was made to destroy the stereotype which most people have of the retarded.

If the employer indicated that he was not interested in hiring the retarded, it was so indicated on the interview form. Only the name of the firm, the address, the telephone number, the name of the person interviewed, his position, and the reason for the "no" answer was completed on the interview form for those not interested in hiring the retarded. If a person indicated an interest in hiring the retarded, the entire form was completed.

At the end of each month all completed forms were turned in to the survey coordinator. A separate sheet listing all businesses visited and length of time spent with each was also turned in at that time.

RESULTS:

A total of 379 businesses were interviewed. Of those interviewed, 201 indicated a willingness to hire the educable mentally retarded while 178 said they would not hire this type of individual. Fifty-eight different job types (with a total of 223 jobs) were found to be available to the educable mentally retarded in the Norfolk area. These 58 job types were divided into seven general categories:

GENERAL JOB CATEGORIES	JOB TITLES
Food Services	bus boy
	counter help
	curb girl
	dishwasher
	kitchen helper
	salad girl
	sandwich maker
	sandwich wrapper
	short order cook
	waitress
Grocery Store	bag boy
	parcel pickup
	produce cutter
Laundry	dry cleaning machine operator
	feeder
	folder
	machine loader and unloader
	sorter
Personal Services	beautician's helper
	shampoo girl
Service Worker	clean-up man
	custodian
	delivery boy
	floor cleaner
	general helper

GENERAL JOB CATEGORIES	JOB TITLES
Service Worker (continued)	grounds keeper
	housekeeper
	janitor
	maid
	nursery man
	porter
	stock boy
	utility man
Theatre	candy attendant
	doorman
	usher
	usherette
Miscellaneous	bakery helper
	bicycle repair helper
	bottle sorter
	car wash worker
	cashier
	concession worker (amusement park)
	delivery helper
	elevator operator
	garage helper
	hall boy
	loader
	marking room porter
	mechanic's helper
	music room operator

GENERAL JOB CATEGORIES	JOB TITLES
Miscellaneous (continued)	oyster shucker
	plumber's helper
	sales girl
	salesman's helper
	shoe shine boy
	tire changer
	warehouseman

SUMMARY:

Several things were learned from the survey. It was discovered that the business community as a whole has a misconception of the educable mentally retarded child. An attempt was made by the interviewers to alter this misconception. Also, information was gained concerning the types of jobs available for the educable mentally retarded child and what the requirements are for these jobs. This knowledge was felt to be invaluable to the teacher in preparing the educable mentally retarded child for employment. Most importantly, the interviewer and the business community were able to exchange views and gain a mutual understanding of the problems each faces in providing employment for the educable mentally retarded.

Sample Interview Form

NORFOLK CITY SCHOOLS

SPECIAL EDUCATION DEPARTMENT

OCCUPATIONAL SURVEY

Date _____

Firm ACME MARKET

Address 121 ELM STREET Phone 555-55[illegible]

Person interviewed JOHN JONES

Position of person interviewed MANAGER

Cooperation of person interviewed VERY COOPERATIVE - SEEMED INTERESTED IN THE PROGRAM & WILLING TO HELP.

Name of job BAG BOY, STOCK CLERK Male X Female ____

Number presently working this job BAG BOY (2) STOCK CLERK (2)

Will employer try a mentally retarded person for this job? YES

Job description (major duties) BAG BOY: (1) BAGS GROCERIES (2) STOCK SHELVES (3) BRING BAGS TO CASHIER (4) CARRY GROCERIES TO CARS (5) WEIGH FOOD (6) PRICE FOOD (7) GENERAL CLEANING

STOCK CLERK: (1) LOAD & UNLOAD MATERIAL (2) GENERAL CLEANING (3) STOCK SHELVES & ARRANGE MERCHANDISE ON SHELVES (4) BAG GROCERIES

Job Requirements

1. Health and Physical PERSON WILL NEED HEALTH CARD - PERSON MUST BE OF AVERAGE STRENGTH

2. Personality NO SPECIFIC TYPE - PERSON MUST BE FAIRLY GOOD AT MEETING PUBLIC

3. Hours

   a. No. hours 4

   b. No. days 5

   c. Time 1:00 P.M - 5:00 P.M.

4. Working Conditions (Hazard and etc.)

   GOOD WORKING CONDITIONS - NO SPECIFIC HAZARDS

5. Personal Appearance (is uniform required, etc.)

   WHITE SHIRT & DARK PANTS - APRONS PROVIDED

6. Training

   a. yes _____ no X

   b. Would employer train? _____

SPECIAL EDUCATION DEPARTMENT
THE OCCUPATIONAL WORK EXPERIENCE PROGRAM
MAURY HIGH SCHOOL

What is the purpose of the program?

The Occupational Work Experience Program is designed for a specific group of boys and girls and some of its objectives are:

1. To assist the pupil in the development of healthy attitudes toward the school, community, and employer.

2. To relate academic learning to the world of work through the use of laboratory techniques and on-the-job training.

3. To encourage pupils to stay in school until high school Special Education requirements are fulfilled.

4. To give pupils some concept of employment opportunities and responsibilities.

5. To develop proper social skills such as dress, manners, communication, etc.

6. To increase academic achievement of the students participating.

How does the program operate?

This is a three year program (Grades Ten, Eleven, and Twelve) structured to meet the needs and abilities of boys and girls who have been enrolled in Special Education classes through Elementary and/or Junior High School. In Grade Ten the student attends required classes adapted to his ability. In Grades Eleven and Twelve, the student is eligible for on-the-job training. A minimum of one-half day is spent in school attending classes adapted to his ability level. The remaining part of the school day is made available for on-the-job work experience. The Teacher-Coordinator conducts this program.

Who takes part?

This educational plan is a cooperative venture between the community and the schools. Employers, counselors, teachers, and the students work together to insure success. Their efforts are synchronized by a Teacher-Coordinator.

Job placement of these students is the all important key to the success of the entire program.

Why do we have it?

The education of the mentally retarded differs from the education of the average child in respect to the emphasis placed upon academic achievement, and

the emphasis placed upon the development of personality and adequacy in the occupational and social areas. They cannot achieve the skills and degrees of knowledge in the academic areas of reading, writing, arithmetic, science or social studies attained by the average child. They can, however, learn to adjust to society and show accomplishment in an unskilled or semi-skilled job.

How does the student benefit?

As young workers get on the job they begin to acquire a sense of accomplishment, and with it, pride and self respect. Many of them are given responsibility for the first time in their lives. It gives them an opportunity to experience what it means to work and what is expected of them by their employers while they are still under the supervision of the school. It assists the student who is in financial need to remain in school. Upon completion of this program, a student who might have dropped out of school can say, I have completed the Special Education Program, and I have two years experience. This is extremely valuable when looking for future employment.

How do employers benefit?

The coordinator will assist the employer in selecting part-time employees and also help in solving problems that might arise with this employee. These students might well become a permanent employee upon completion of high school. This program gives the employer an opportunity to render a valuable service to his community through the schools.

How does the employer participate?

He may secure the services of these young people by contacting Maury High School--Phone 441-2611 and ask for Cecil Harris, Coordinator of Occupational Work Experience Program.

VT 019 112

VT 019 112
RIPKA, ELIZABETH
AN ANALYSIS OF SHORTHAND ATTRITION IN PENNSYLVANIA'S PUBLIC HIGH SCHOOLS AND THE PREDICTION OF SHORTHAND SUCCESS.

PENNSYLVANIA BUSINESS EDUCATION ASSOCIATION.
PENNSYLVANIA STATE DEPT. OF EDUCATION, HARRISBURG. BUREAU OF VOCATIONAL, TECHNICAL AND CONTINUING EDUCATION.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 71 101P.

DESCRIPTORS - *STENOGRAPHY; RESEARCH PROJECTS; *ABILITY IDENTIFICATION; *DROPOUT ATTITUDES; *APTITUDE TESTS; *PREDICTIVE MEASUREMENT; GRADE PREDICTION; PREDICTOR VARIABLES; HIGH SCHOOL STUDENTS; QUESTIONNAIRES; COMPARATIVE STATISTICS; MULTIPLE REGRESSION ANALYSIS
IDENTIFIERS - *SHORTHAND ATTRITION RESEARCH PROJECT: PENNSYLVANIA

ABSTRACT - THE YEARLY SHORTHAND ATTRITION RATE IN PENNSYLVANIA'S PUBLIC HIGH SCHOOLS IS MORE THAN 50 PERCENT, IN SOME SCHOOLS MORE THAN 70 PERCENT. EACH FAILURE REPRESENTS WASTED TIME AND EFFORT AND FROM THE ECONOMIC STANDPOINT IS EXTREMELY EXPENSIVE. THE SHORTHAND ATTRITION RESEARCH PROJECT WAS DEVELOPED TO IDENTIFY ABILITIES, APTITUDES, INTERESTS, AND MOTIVATIONS IN HIGH SCHOOL STUDENTS SUCCESSFULLY COMPLETING SHORTHAND COURSES AND TO ISOLATE PREDICTORS OF THIS SUCCESS. DATA FROM A TEST BATTERY, A STUDENT QUESTIONNAIRE, AND SCHOOL GRADE RECORDS AND ENROLLMENT STATUS IN SHORTHAND COURSES WERE ANALYZED TO EVOLVE PREDICTION TOOLS OF SUCCESS OR FAILURE IN THE SHORTHAND PROGRAM. AS A RESULT OF THIS STUDY IT WAS CONCLUDED THAT EXPERIMENTAL PROGRAMS COULD BE DEVISED TO COMPENSATE FOR WEAKNESSES IN THOSE STUDENTS UNLIKELY TO SUCCEED IN THE PRESENT SHORTHAND PROGRAM. THE PROJECT METHODOLOGY PERMITS ITS GENERALIZATION TO OTHER SECTIONS OF THE COUNTRY. (MF)

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AN ANALYSIS OF SHORTHAND ATTRITION IN PENNSYLVANIA'S PUBLIC HIGH SCHOOLS AND THE PREDICTION OF SHORTHAND SUCCESS

Elizabeth Ripka

Project #40001

Sponsored by The
Pennsylvania Business Education Association

1971

PENNSYLVANIA DEPARTMENT OF EDUCATION

Bureau of Vocational, Technical and Continuing Education

ED 064113

1113

PREFACE

Learning symbolic shorthand and refining transcription skills to meet vocationally acceptable levels demand harmonious union of diverse abilities more complex than the uninitiated student can foresee. Among those who have tried to learn the intricacies of shorthand and its transcription, a substantial percentage have never attained the satisfaction of mastering the process. The consequences of such negative impact are far-reaching--for the student, his family, the school, and business community.

In an attempt to analyze factors involved in successful shorthand learning, the Shorthand Attrition Research Project (SHARP) was developed. The outcome of the research is attributed to the active interest of a number of people.

Initial momentum came from the Business Education Division of the Pennsylvania Department of Education. Dr. William H. Selden, Senior Program Specialist, and Kenneth A. Swatt, Program Specialist, gave continuing cooperation. Dr. John W. Struck, Director of the Bureau of Vocational, Technical and Continuing Education, and Robert D. Edwards, Chief of the Division of Instructional Consultation, gave encouragement. Representing the Research Coordinating Unit were Dr. Jay Smink, Mrs. Patricia Sites, Dr. Carroll A. Curtis, and Dr. Ferman B. Moody. With T. J. Rookey, of the Office of Research and Statistics, they contributed data for statistical processes.

Personal contact with the high schools included in the program was provided by the Vocational Education Consultants: Wayne L. Grubb, H. Foster Hill, Lane L. Kemler, Kenneth G. Kirk, Leonard J. Liguori, Mrs. Leah J. Love, Anthony Nosal, and Mrs. Mary B. Recupero. They administered the tests in the schools, also. Computer and consultation assistance was purchased from Cardall Associates, of Princeton, New Jersey.

Special appreciation is directed to those who participated in the testing phase of the study, school administrators, teachers, and students.

The Pennsylvania Business Education Association, represented by Mrs. Arveta F. DeCaetano and Dean A. E. Drumheller, served as sponsor for the project.

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ABSTRACT

One out of two students in Shorthand I never completes Shorthand II. During the 1969-70 school year, the shorthand attrition rate was 52.5 per cent. This statistic represents a waste of time and energy for students and faculty, as well as a financial loss. Compounding the problem is the need in business for workers with good office skills.

This study was developed to (a) identify those specific abilities, aptitudes, interests, and motivations prevalent in students who successfully complete the shorthand sequence, and (b) isolate predictors of this success. To accomplish these aims, an attempt was made to define significant and meaningful differences among students who withdrew or were dropped from shorthand, those who passed, those who failed, and those who were eligible to enroll in the second year of shorthand but did not. These differences were considered for both beginning and advanced shorthand students.

The model for research which seemed most feasible was a one-year study using partially matched students. A two-year longitudinal model was eliminated primarily because, with the high attrition rate, a much larger original sample would have been necessary than the one planned. Two samples were selected which were related by time, school, course of study, class, and teacher.

The schools were chosen at random from a list which was stratified according to size, geographic location, and rate of shorthand attrition. From the thirty-six schools selected in this manner, it was necessary to delete four because unforeseen problems prevented their participation.

Two separate samples were drawn from the students taking part in the study. They were defined as:

Sample 1 - All students, in the designated schools, who were enrolled in Shorthand I in September, 1970. N = 1132

Sample 2 - All students, in the designated schools, who were enrolled in Shorthand I in September, 1969. N = 958

The test battery developed for the program was composed of seven instruments yielding a total of twenty-six subscores. Those included were the E. R. C. Stenographic Aptitude Test, Press Test,

Cardall Education Battery (Mental Alertness, Primary Business Interests, Clerical Aptitude, Practical Judgment), and a two-part questionnaire constructed specifically for this study. They tested the characteristics of writing speed, word discrimination, phonetic spelling, dictation in longhand, mental alertness, interest in business, reading speed, reaction under pressure, reasoning, judgment, attitudes, and opinions.

Of potential criteria collected from school records, the three selected as being most important to the purpose of the study were: (a) final grade in Shorthand I, (b) final grade in Shorthand II, and (c) enrollment status in Shorthand II.

Descriptive statistics, such as means and standard deviations, were compiled to summarize distributions on all measurement and criterion variables. Comparative statistics were selected to retain maximum statistical power for the number of comparisons to be made. The t-test was used to compare two groups on the same variable. When more than two groups were to be considered at one time, a one-way analysis of variance model was applied.

A step-wise multiple regression analysis was the method chosen to examine the extent to which the criteria could be predicted by a combination of the measurement variables. The measures included in the predictor matrix were the twenty-five subscores of the administered tests, the school size variable, and the questionnaire scales.

To develop a potentially predictive scale for each sample, each item in the student questionnaire was correlated with the criteria. In terms of interrelationships and logical consequences of utilization, examination of the various criteria resulted in the final grade for either year of study appearing as the best for further use. Intercorrelation matrices were computed using the questionnaire-scaled score, final grade criterion, and size of school, as well as all predictor scores. This procedure was followed independently for the two samples.

Equations were developed for prediction of the following: Shorthand I grade, Shorthand II status (enrolled or not enrolled), and Shorthand II grade.

As the result of this study, the following points are recommended:

1. Status information should be collected for Sample 1 before June, 1972 to give added value to this study. Workable time limits of the present research prevented inclusion of these data.

2. The wealth of attitudinal information presently available from the questionnaire data warrants further consideration to develop a more comprehensive understanding of shorthand students' performance.

3. Using the prediction tools developed in this study, experimental programs can be devised to compensate for weaknesses in those students who appear unlikely to succeed in the present shorthand program.

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CHAPTER I

THE PROBLEM

Nature of the Problem

The yearly shorthand attrition rate in Pennsylvania's public high schools is approximately fifty per cent. For example, in September, 1969, there were 26,538 students enrolled in Shorthand I while, in September, 1970, there were only 12,602 (47.49%) enrolled in Shorthand II. Because a one-year program of shorthand is generally considered to have limited vocational value, this loss of over half the stuuents (52.51%) is alarming. Taken individually, some schools have an attrition rate of over seventy per cent. From the humanistic standpoint, each failure represents wasted time and effort for both student and teacher; from the economic standpoint, a wasted year for fourteen thousand students is extremely expensive.

If the majority of these students failed Shorthand I, which would make them ineligible to continue, the thrust of research would be toward teaching methods, grading practices, and counselling procedures. The fact is, though, that most students successfully complete the first year of study but do not enroll in Shorthand II. The above factors are influential; however, a study concerned with this phenomenon must look further, to the students themselves.

The Shorthand Attrition Research Project (SHARP) was designed as both an investigatory and predictive study. Its first aim was to identify those specific abilities, aptitudes, interests, and motivations prevalent in those students who "succeed" in shorthand. For the purpose of this study, "success" was defined as passing Shorthand I for the Sample 1 students, and enrolling in and passing Shorthand II for the Sample 2 students. (This is explained in greater detail in the next chapter.) Secondly, the study attempted to isolate predictors of this success. As a result, the project should provide new descriptive information about shorthand students as well as allow for a more accurate counselling procedure.

Although SHARP was conducted in and for the Commonwealth of Pennsylvania, precautions have been taken which should permit its generalization to other sections of the country. The continued import of this study is reflected in projected employment figures which indicate that a large growth in numbers of workers in the stenographic and clerical field is anticipated. An examination of newspaper classified advertisements reveals more jobs currently available in these fields than in other business areas. With the increasing trend toward automation of routine business functions, the need for workers with specialized office skills is constantly rising.

Background Information

An examination was made of literature, published in the last fifteen years, considered pertinent to the prediction and/or analysis of failures in shorthand. This period is especially revealing because the attrition problem remained stable even though changes were implemented to facilitate learning of a major shorthand system. During this time span, there was higher attrition in shorthand than in any other subject in the curricula of the nation's high schools, but analytical research efforts were sparse.

Some evidence is available that intelligence has a nonlinear relationship with achievement in shorthand. That is, at least an average intelligence appears to be necessary for success, but higher levels of intelligence are not indicative of greater achievement in shorthand. In a study conducted by the Bureau of Business Education in Chicago (1954), a dichotomized criterion revealed no significant difference in intelligence quotients and grades between students who completed shorthand and those who did not.

Although grades in English have frequently been examined as a possible correlate, the confounding of content areas renders any conclusion dubious. Various studies have grouped, without identification, subject matter as diverse as grammar, literature, composition, and letter writing. In addition, some ability groupings allow an "A" in one section to be comparable to a "C" in another. Without appropriate weighting, resultant findings are unreliable for further use.

There appears to be a relationship between certain factors in learning shorthand and in learning a foreign language. In a study on predicting elementary shorthand achievement by M. J. Lang (1960), a significant correlate was the Iowa Foreign Language Aptitude Test (1925-44). Her overall conclusion, however, was that "no single measure . . . exhibited sufficient control for the accurate prediction of shorthand achievement," and added that this substantiates the findings of earlier research.

Charles Duncan (1960), using the Brown-Carlsen Listening Comprehension Test (1955), found listening ability to be related ($r = .36$) to shorthand achievement.

Berle Haggblade (1965) found, in a study at the University of California, that penmanship and phrasing ability have little relation to shorthand achievement.

According to F. A. Johnson (1962), teachers and students show little agreement in their interpretations of the causes of shorthand attrition. Teachers surveyed offered the following reasons for dropping out: (a) not able to react to sound; (b) lack of ability in reading, English, and spelling; (c) low I. Q.; (d) dislike for homework; (e) scheduling difficulty for college-bound students; (f) classes too large; and (g) too many absences.

The students summarized their views as: (a) the class moves too fast; and (b) boredom.

Although most of the researchers considered personal factors such as motivation, enthusiasm, teaching techniques, and other relative intangibles peculiar to shorthand as being influential, difficulties in measurement have kept many such variables in the hypothetical phase.

Much of the research has been performed as doctoral studies and has used only college samples. Findings generated from these groups should be applied cautiously to high school populations. Nevertheless, it is reasonable to assume that the difficulties found in college studies may be expected to occur in any research attempting to predict success in learning, and in the continuing study of shorthand.

This review of pertinent literature suggests there is a paucity of relevant information concerning attrition. Typically, a problem so easily recognized, as evidenced by the continuing high attrition rate, is reflected by the plethora of research seeking a solution or, at least, an explanation. That this is not the case with the problem of shorthand attrition is indicative of the complexity of the research.

Specific Objectives

Under the limitations imposed by the research design, the following specific objectives were planned for this project:

1. To attempt to define significant and meaningful differences among:

    a. Students who withdraw or are dropped from Shorthand I;

    b. Students who pass Shorthand I;

    c. Students who fail Shorthand I;

    d. Students who are eligible to enroll in Shorthand II, but fail to do so;

    e. Students who withdraw or are dropped from Shorthand II;

    f. Students who pass Shorthand II;

    g. Students who fail Shorthand II;

2. To establish a battery of selection tests for Shorthand I, and to empirically determine the predictive validity of the battery using multiple regression weights;

3. To establish a similar battery of selection tests for Shorthand II, again using multiple regression weights;

4. To make recommendations, based on the analysis and interpretation of all data, to the Research Coordinating Unit and Business Education Division of the Pennsylvania Department of Education.

CHAPTER II

METHODOLOGY

Determination of the Design

In surveying the possible approaches to use, three basic methods seemed feasible:

I. A one-year study limited to consideration of only the students in Shorthand I;

II. A two-year longitudinal study following students through Shorthand I and II;

III. A one-year study using partially matched students to gather most of the information obtainable from the second alternative plan while retaining the economy of the first.

The third alternative was chosen for its obvious efficiencies. In contrast to Model I, more information is offered at little additional cost in time, money, and disturbance to the cooperating schools. The longitudinal Model II was eliminated from consideration, not only because of the expense in time and money, but also because the high attrition rate in shorthand would necessitate a much larger original sample.

The model chosen provides maximum use of both samples; it yields findings exceeding those of Model I, and similar to those of Model II.

Selection of the Samples

Within the framework of a one-year study, two samples were selected to be related by time, school, curriculum, class, and teacher. The schools from which these samples were drawn were selected with consideration to school size, geographic location, and attrition rate in shorthand.

The Bureau of Educational Statistics, the Research Coordinating Unit, and the Office of the State Supervisor of Business Education cooperated in providing a list of schools with demographic information as follows:

Size of school: based on weighted average daily membership, the selected schools were trichotomized into Small (less than 4,000); Medium (4,000 - 12,500); and Large (more than 12,500).

Attrition rate: 1969 figures on attrition between Shorthand I and Shorthand II for the selected schools permitted a High/Low dichotomy split at 50 per cent attrition; (a high attrition rate was defined as 50 per cent or greater).

Geographic location: the Commonwealth of Pennsylvania was divided into five districts.

The schools selected at random from the list were stratified on the basis of size in the statewide distribution, and split evenly by the attrition rate. To guarantee representability, the number of eleventh grades in each level was divided by the total number of eleventh grades in Pennsylvania. This resulted in a percentage which became the percentage of the total sample which would be selected from each level. Stratification by size was slightly modified to permit equivalent numbers of students across categories, resulting in an inverse relationship between school size and number of schools included.

In each of the schools selected, the chief school administrator was contacted and asked for written consent for that school's participation. Where consent was withheld, an alternate school was selected by attempting to match the above control variables. A complete listing of schools included in the study is reproduced in Appendix A.

From the thirty-six schools obtained, two separate samples were drawn. In each case, to avoid any unintentional bias, all students who met the definition were included in the sample. The two samples were operationally defined as:

Sample 1: consisting of all students, in the designated schools, who were, in September, 1970, enrolled in Shorthand I.

Sample 2: consisting of all students, in the designated schools, who were, in September, 1969, enrolled in Shorthand I.

Measurement Variables

Measurement devices for examination as possible predictors were selected after review of pertinent literature, interviews with testing

specialists, inspection of many testing materials, and consideration of the experience of the principal investigator. The staff of the Test Library of Temple University Testing Bureau was helpful in providing materials and advice. Relevant factors considered included: validity and reliability of the tests; representation of variables previously shown to be related to success in shorthand; ease of administration and scoring; time requirements; and cost.

The resulting test battery was composed of seven instruments yielding a total of twenty-six subscores considered germane to this study. Time required for the entire battery was approximately four hours. The tests chosen were:

E. R. C. Stenographic Aptitude Test
Science Research Associates, Inc.
Chicago, Illinois

Press Test
Education-Industry Service
Chicago, Illinois

Cardall Education Battery
(Mental Alertness; Primary Business Interests; Clerical Aptitude; Practical Judgment)
Princeton, New Jersey

Questionnaires I and II
(constructed specifically for this study)

The relationship of most of these tests to the study of shorthand is evident; however, the Press Test, aside from providing a measure of reading speed and other perceptual task, purportedly measures performance in a stress situation. This factor was deemed as of possible importance to predicting learning performance in a classroom environment.

These tests yielded the following score variables for analysis:

ERC:
1. Speed of writing
2. Word discrimination
3. Phonetic spelling
4. Vocabulary
5. Dictation (in longhand)
6. Total

Press:
7. Reading speed
8. Color-naming speed
9. Color-naming speed with distraction
10. Difference between (7) and (8)
11. Difference between (8) and (9)

MA:	12.	Mental alertness
PBI:	13.	Business interest in accounting
	14.	Business interest in collections and adjustments
	15.	Business interest in sales - office
	16.	Business interest in sales - store
	17.	Business interest in records management
CA:	18.	Verbal perception: clerical
	19.	Numerical perception: clerical
	20.	Verbal reasoning: clerical
	21.	Numerical reasoning I: clerical
	22.	Numerical reasoning II: clerical
	23.	Records management: clerical
PJ:	24.	Social judgment
	25.	Factual judgment
Ques:	26.	Attitudes toward study of shorthand

For the sake of brevity in presenting information and discussion, abbreviations or part of the names of these measurements have been used. Table I in Appendix D presents full test information and representative abbreviations.

In addition to the score variables, certain other items of available information were examined for use as either predictor or control variables. These included: size of school; geographic area; school attrition level in shorthand; sex, and, for Sample 2, final grade in Shorthand I. Also examined were non-scalable item responses to the questionnaire. The questionnaire was built so that the major portion would be essentially identical for Samples 1 and 2, but with an additional section for Sample 2.

Criterion Variables

Although several potential criteria were collected from school records, three were selected as being most important to the aims of the study:

1. Final grade in Shorthand I;
2. Final grade in Shorthand II;
3. Enrollment status in Shorthand II.

Grade variables were examined both continuously (A through E or F) and dichotomously (Pass - Fail) for maximum predictive power. Enrollment status was originally expected to form a nominal scale of Enrolled, Not enrolled, Withdrew, Dropped. Reporting and coding problems, to be mentioned later, made it necessary to collapse the "withdrew" and the "dropped" categories into one labelled, "WD."

Data Collection

Serving as coordinators between the principal investigator and the selected schools were eight Vocational Education Consultants who assisted in obtaining the cooperation of chief school administrators, scheduled the time for test administrations, arranged for compilation of criterion data from school records, and actually administered the tests. Also aiding in these functions was the Business Education Adviser in the Bureau of Vocational Education in Pennsylvania.

To establish general direction and clarification of problems, two meetings were held with these consultants, the State Supervisor, Business Education Adviser, and principal investigator in May, 1970. Another meeting, specifically to review directions for test administration and problems to be expected, and to distribute the tests, was held September 1, 1970, with a testing specialist.

Data Preparation, Transgeneration, and Collation

Upon completion of testing, the Mental Alertness Test, Primary Business Interests Test, Practical Judgment Test, and Questionnaire were scored by a high-speed electronic optical scanner which generated punched-card output including the students' identification numbers and respective subscores.

The Clerical Aptitude Test, Press Test, and ERC Stenographic Aptitude Test were hand-scored by a group of specially trained persons who also coded these scores on Student Information Sheets (SI sheets). The SI sheets were sent to Cardall Associates for processing by the optical scanner and returned to the principal investigator for use in coding the Fall, 1970, and Spring, 1971, criterion data.

The Primary Business Interests Test (PBIT) was computer-scored with punched card output. Individual profile sheets contained scores on the five subscales of the PBIT, percentile standings, and some brief interpretive information. These student profiles were sent to the school principals for distribution to the students. This was intended to be (a) a form of motivation, and (b) a feedback device for those who participated in the testing program.

With recognition of the error potential in the data collection method, as well as a need to eliminate subjects with incomplete information, an elaborate system of checks and collations was undertaken. Incorporating both visual and computer examinations, all data were inspected for reliability of information. Input to computer checks were five punch cards:

Card 1:
a. Sample designator
b. School number and student identification number
c. Sequence number
d. Sex code
e. Geographic area code
f. School size code
g. Six subscores (Clerical Aptitude)
h. Five subscores and total (Stenographic Aptitude)
i. Sample 1 only - Five part scores (Press Test)
i. Sample 2 only - Status in Shorthand I, absent rate, grades

Card 2: Two part-scores (Practical Judgment)

Card 3: Total score (Mental Alertness)

Card 4: Five subscores (Primary Business Interests)

Card 5: All responses to Questionnaire

Each of the above variables was examined for acceptable value range and returned to coders for correction if found in error. All cards were then matched to determine incomplete sets and invalid identification numbers. All possible corrections and/or alterations were made before any subject was deleted from the sample. Output from this phase consisted of complete and reliable data sets for all subjects remaining in either sample.

Intermediate and final criterion information became available at various times in the conduct of the study. As each set was reported by a school, it was visually examined, coded, scanned, and computer checked before assimilation with measurement data.

Analysis: Descriptive/Comparative

Because of the many subsamples involved, as well as the specificity of the objectives (see Chapter One), treatment of the analytical processes has been divided into two areas: Descriptive/Comparative and Predictive. This first section will describe the statistical methodology aimed primarily at Objectives 1-a through 1-g.

Descriptive statistics, such as means and standard deviations, were compiled to summarize distributions on all measurement and criterion variables. Tables presenting these data were constructed separately for Samples 1 and 2. In addition, each of the main samples was subdivided into groups defined by School Size and Geographic Area with descriptive statistics reported for each of these subsamples. Percentile tables were constructed for test variables.

Comparative statistics were selected to retain maximum statistical power for the number of comparisons to be made. Thus, the statistic known as Student's t was computed to compare two groups on the same variable. Essentially, the t-test indicates the extent to which obtained sample differences between means are representative of population differences, rather than attributable to chance. Throughout this study, statistical significance was defined as those observations which have a probability equal to, or less than, five per cent ($p \leq .05$) of occurring by chance alone.

When more than two groups were to be considered at one time, such as the three sizes of schools, a one-way analysis of variance (ANOV) model was applied. Although technically defined in different terms, this statistical test is essentially an extension of the t-test.

Due to limitations of the sample, some desirable statistical tests could not be performed. For example, it was hypothesized that an interaction effect exists between school size and geographic area regarding both criterion and measurement variables. This effect, if found, would demonstrate that school size and geographic area are interrelated in such a fashion that the specific combination of the two has an effect on the other variables. That is, small urban schools and large rural schools may differ in ways that cannot be explained by either their size or location considered alone, but only by the combination, or interaction, of the two.

To test this hypothesis would require computation of two-way analyses of variance which demands an adequate sample for each possible combination. The method of sampling used for this study did not permit this distribution, so the hypothesis went untested.

In addition to the descriptive statistics computed on test scores and criterion variables, the items in the specially constructed questionnaire were treated separately. Complete item analyses were run for the two samples and selected items were tabulated for this report.

Because the emphasis of the research was to predict success in the first year of shorthand study, the majority of the comparisons are based on Sample 1. Any differences found between, or within, samples were taken into consideration during the predictive phase of analysis described below.

Analysis: Predictive

As an initial step in the predictive phase, the student questionnaire was examined for scalar tendencies. Those items which could be considered as conforming to either interval or ordinal scale models were treated as independent variables, along with the criteria, in an intercorrelation matrix. The correlations of each item with the criteria and with other items were inspected to derive a potentially predictive scale for each sample. Throughout the predictive phase of analysis, the term, Questionnaire, applies to the summated score on one of these scales.

Examination of the various criteria, in terms of interrelationships and logical consequences of use, resulted in the final grade for either year of study being accepted as the best for further use. Because the Drop/Withdrew category was confounded in reference to grade distributions and followed no logical scaling placement for correlational analysis, these subjects were dropped.

Intercorrelation matrices were computed using the questionnaire scaled score, the final grade criterion, and size of school, as well as all predictor scores. The matrix for Sample 1 consisted of 756 correlations; Sample 2's matrix, deleting the Press Test but adding final grade in Shorthand I as a possible predictor, amounted to 552 correlations.

These same sets of variables were then entered into step-wise multiple regression analyses to determine the extent to which the criterion could be predicted by a weighted combination of measurement variables. This model first selects the single best predictor, then builds the combination by adding or subtracting one more predictor at each step until no significant variance may be added by any remaining predictor. This model was selected because it is uniquely suited to cost-effectiveness analysis in which the cost in time, money, and trouble to the predictive accuracy increase at each step. For example, if only one subscore of a multiple-part test enters into the equation, it may not be worth the expense of administering the entire test to gain a small amount of accuracy. As a result of these interpretations, some variables were deleted, and the remaining were entered into the regression analysis again. This procedure was followed independently for the two samples.

CHAPTER III

DATA COLLECTION

Although it is not usual practice to include a special chapter on data collection in a report of this nature, two major reasons compel its incorporation here. Most important of these is the issue of ethical scientific reporting. As there were some irregularities in this phase of the study, it would be derelict to ignore the possible effects upon any conclusions. The second reason, and almost equally significant, is the hope that expression of the problems encountered in this study will be of benefit to future researchers who attempt to draw a large stratified sample from a statewide school system.

Test Administration

Before the testing program began, two schools withdrew. In both cases the reason was inadequacy of testing facilities, a condition which did not exist and which could not be foreseen by the school administrators when arrangements were made for their participation. However, matched substitutes were easily selected from the oversized list provided by the Research Coordinating Unit.

One school was deleted when only twenty of the expected two hundred students appeared for testing. Some confusion had been created by the department chairman in preparing for the testing program.

One entire test was deleted from use with Sample 2 because of unavailability. The publishers of the Press Test could not supply enough copies for both samples, so it was determined that more important use of the available copies could be obtained by using all of them for Sample 1. Future researchers might note that the smaller test publishers do not stockpile large numbers and require considerable notice.

All testing was to have been completed before the end of October, 1970 to avoid confounding the data by the effects of attending shorthand classes. One school missed this deadline and was deleted when analysis indicated test scores had been affected by this extended exposure.

Each of the test administrators was asked to submit a report explaining any irregular testing conditions. These reports were generally positive, but some problems were mentioned. Among these were inadequate and crowded facilities, overheated rooms, construction noise, and, sometimes, lack of cooperation from school officials. The general absence of reports of

student-created disturbances may be attributed to precise planning in mass testing techniques and the capabilities of the test administrators. Included in the minor disruptions were fire drills, failing lights, illness, an overly active public address system, noisy gym classes, one "severe coughing spell lasting over an hour," and one student who cut her finger on a test "to the extent that she had to stop."

Because these varying test conditions may have caused spuriously low scores for entire groups, interschool comparisions have not been presented in this report. It is assumed, however, that conditions affecting an entire school-sample do not seriously influence group correlations. In any case, the deletion of school-samples for irregular testing conditions would not only have fatally depleted the sample size, but would also have set unrealistically high standards for a study of this nature.

Collection of Data

Data collection may be considered as two separate phases: administration and return of test materials, and collection of information from school records. The former has been discussed above; apart from the irregularities described, this phase went very well. Excellent test security was maintained throughout the study with no reports of any "lost" tests.

Gathering data from school records was considerably more difficult. Variations in filing methods, dates of entries on records, and availability of transcripts caused numerous delays and additional costs. Although most school officials were very cooperative, missing information was found to be an unavoidable problem. Although definitions and the state code were given as a guide, differences in the interpretation of "Drop" and "Withdrawal" necessitated the combination of these categories.

Some records contained unexplainable discrepancies; e.g., a student who failed both semesters of Shorthand I, but received a grade for the second semester of Shorthand II after being listed as withdrawing from the first semester.

Future researchers are encouraged to allow much time for data collection of this nature and to be prepared to double check a large percentage of the information.

CHAPTER IV

RESULTS: DESCRIPTIVE/COMPARATIVE

Following the format established in Chapter Two, the results will be discussed in separate sections for Descriptive/Comparative and Predictive outcomes. Because so many tables are necessary for accurate reporting of the data, a number of them will be referred to in these two chapters but will be reproduced in the appendices. Tables pertinent to the discussion will be inserted in the chapter content.

Examination of the presented tables will reveal varying sample sizes have been used. An effort was made to report as much meaningful information as possible; therefore, tables in the Descriptive/Comparative chapter were based on the larger sample sizes available before necessary deletions were made. Individuals with incomplete information were included for the descriptive variables they have, but were excluded when complete data were necessary for predictive analysis. This process has resulted in data being presented for the maximum number of individuals for each case. The major emphasis throughout this chapter has been placed on description of, and comparisons within, Sample I. This emphasis is in accord with the thrust of the project toward prediction of first year shorthand results.

Sample Descriptions

Tables 1 and 2 present summary descriptions of the samples on the basis of individual school, geographic area, and size of school. They indicate the deviations from representativeness of sample which occurred.

In four cells, there were no entries and another had too few entries to treat separately. Such a disproportionate representation across Geographic Area and School Size variables should not seriously limit the generalization of obtained findings, but does restrict any analysis of possible interaction effects, as explained above.

TABLE 1

Distribution of Schools (and Sample Sizes) Categorized According to Geographic Area and School Size
SHARP Sample 1 (N=1132)

School Size	Eastern Area 1	Central Area 2	Western Area 3	Philadelphia Metropolitan Area 4	Pittsburgh Metropolitan Area 5	Total
Small	Tulpehocken (17) Downingtown (76) Phoenixville (44) Penn Manor (46) Lehighton (25) Parkland (72) Millville (11) N. Pocono (16) Perkiomen (33) 9 (340)	J. Buchanan (39) Kennard-Dale (21) Cumberland Valley (56) 3 (116)	Waynesburg (18) Frazier (38) Purchase Line (29) Hollidaysburg (52) Cambria Hts. (32) Clarion-Limestone (18) 6 (187)		South Park (27) 1 (27)	19 (670)
Medium	Unionville (10) Henderson (56) Central Bucks (19) 3 (85)		Midland (2) 1 (2)	Upper Merion (29) 1 (29)	Homestead (21) Mt. Lebanon (42) Upper St. Clair (21) 3 (84)	8 (200)
Large	W. Allen (89) 1 (89)			J. Bartram (54) Kensington (27) 2 (81)	Allegheny (42) Perry (50) 2 (92)	5 (262)
Total	13 (514)	3 (116)	7 (189)	3 (110)	6 (203)	32 (1132)

Note: Numbers in parentheses following school names indicate # of individuals from that school. Cell totals and row and column totals reflect the number of schools and, in parentheses, the number of students.

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TABLE 2

Distribution of Schools (and Sample Sizes) Categorized According to Geographic Area and School Size
SHARP Sample 2 (N=958)

School Size	Eastern Area 1	Central Area 2	Western Area 3	Philadelphia Metropolitan Area 4	Pittsburgh Metropolitan Area 5	Total
Small	Tulpehocken (10) Downingtown (41) Phoenixville (35) Penn Manor (32) Lehighton (18) Parkland (61) Millville (4) N. Pocono (32) Perkiomen (31) 9 (264)	J. Buchanan (44) Kennard-Dale (18) Cumberland Valley (52) 3 (114)	Waynesburg (2o) Frazier (30) Purchase Line (27) Hollidaysburg (38) Cambria Hts. (38) Clarion-Limestone (14) 6 (173)		South Park (23) 1 (23)	19 (574
Medium	Unionville (17) Henderson (52) Central Bucks (10) 3 (79)		Midland (7) 1 (7)	Upper Merion (27) 1 (27)	Homestead (21) Mt. Lebanon (18) Upper St. Clair (10) 3 (49)	8 (162
Large	W. Allen (77) 1 (77)			J. Bartram (44) Kensington (24) 2 (68)	Allegheny (24) Perry (53) 2 (77)	5 (222
Total	13 (420)	3 (114)	7 (180)	3 (95)	6 (149)	32 (958

Note: Numbers in parentheses following school names indicate # of individuals from that school. Cell totals and row and column totals reflect the number of schools and, in parentheses, the number of students.

Measurement Variables

Table 3 offers the descriptive and comparative statistics for all measurement variables, excepting the unique questionnaire scales, across the two samples. As explained in Chapter Two, t-tests were used to determine the significance of obtained differences between the samples. The value of the obtained t is given, as well as the level of significance. The minimum level of significance acceptable to this study was defined as a probability of .05 (five chances in one hundred that the samples were actually not different in regard to the variable in question.) Probabilities of .01 or less are indicated in the tables; where there is no indication of statistical significance, it may be assumed that there was no difference.

Table 3 shows that 19 of the 20 possible comparisons revealed significant differences, and that 18 of these were in favor of Sample 2. Both of these two deviations pertain to subscales of the Primary Business Interests Test (PBIT), which cannot logically be expected to follow any set pattern across the samples. In contrast, the "achievement" tests (ERC Stenographic Aptitude and Clerical Aptitude) display differences which may be attributable to having completed a year of shorthand, and the two remaining tests (Mental Alertness and Practical Judgment) reflect differences in the direction expected by self-selection and maturation. Further discussion of the obtained differences will be reserved for Chapter Six.

Complete normative information, in the form of comparative percentile tables for all measurement variables, may be found in Tables I through XXI in Appendix B.

The control variable of Geographic Area was examined through the comparative analysis of all measurement variables for Sample 1. These data, including the results of one-way analysis of variance, are presented in Table 4.

Table 4 shows that all of the subscores from the Clerical Aptitude (CA) Test and from the Stenographic Aptitude Test (ERC), as well as four scores from the Press Test and one from the PBIT, reflect significant differences across geographic areas. This may be interpreted as displaying a relationship between test performance on these measures and area of the state.

TABLE 3

Means, Standard Deviations, and t Values for Predictor Variables
SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Variable	Mean		Corrected Standard Deviation		t
	Sample 1	Sample 2	Sample 1	Sample 2	
Clerical Aptitude					
Part A	56.07	60.54	14.01	13.95	7.279**
Part B	39.86	42.85	7.79	8.17	8.545**
Part C	37.46	40.79	10.61	11.19	6.969**
Part D	60.01	66.41	16.48	18.02	8.470**
Part E	33.60	37.84	10.60	10.34	9.210**
Part F	42.36	46.07	16.84	17.57	4.917**
ERC Stenographic Aptitude					
Part I	57.20	59.57	12.63	11.68	4.422**
Part II	35.64	36.51	6.07	5.91	3.303**
Part III	32.12	35.08	11.46	11.04	5.980**
Part IV	21.49	22.30	8.02	7.75	2.335*
Part V	148.65	166.53	34.36	27.50	12.964**
Total	294.84	319.49	53.50	44.01	11.367**
Press Test					
Part 1	51.12	----	9.54	---	----
Part 2	49.71	----	9.29	---	----
Part 3	48.68	----	10.29	---	----
Part 1-Part 2	48.05	----	11.43	---	----
Part 2-Part 3	48.39	----	11.39	---	----
Primary Business Interests Test					
Accounting	29.01	26.10	14.48	14.79	-4.532**
Collection-Adjustments	10.99	11.66	7.17	7.29	2.112*
Sales-Office	14.71	15.26	6.53	6.43	1.932
Sales-Store	55.43	59.47	22.56	20.99	4.209**
Records Management	22.29	22.99	7.78	7.63	2.067*
Practical Judgment					
Factual	37.47	38.67	5.73	5.72	4.775**
Social	38.29	39.32	7.81	6.39	3.260**
Mental Alertness	25.74	27.26	9.83	9.87	3.514**

Note: "t" column reports results of t tests comparing means of Sample 1 with Sample 2;
* indicates $p \leq .05$; ** $p \leq .01$.

TABLE 4

Mean Scores of Predictor Variables Categorized According to Geographic Area
SHARP Sample 1 (N=1132)

Variable	Area 1	Area 2	Area 3	Area 4	Area 5	F
Clerical Aptitude						
Part A	55.06	59.61	59.21	52.91	55.39	6.52**
Part B	39.38	40.19	40.87	38.34	40.74	3.06*
Part C	37.58	40.00	39.70	28.76	38.34	24.52**
Part D	62.59	58.97	58.58	48.54	61.61	18.49**
Part E	33.82	28.76	33.77	31.93	36.58	11.19**
Part F	41.60	41.72	40.15	29.28	53.77	47.79**
ERC Stenographic Aptitude						
Part I	55.83	52.92	55.26	59.48	63.70	21.80**
Part II	36.54	35.89	34.79	32.15	35.91	13.60**
Part III	33.03	31.55	32.21	25.50	33.68	11.39**
Part IV	22.27	22.19	20.15	17.24	22.70	12.15**
Part V	142.85	135.88	153.85	114.39	184.37	133.53**
Total	290.20	278.53	296.31	248.66	339.54	75.26**
Press Test						
Part 1	50.19	53.06	50.28	53.29	51.99	4.70**
Part 2	48.82	48.15	50.50	51.44	51.21	4.68**
Part 3	48.41	45.52	50.22	48.38	49.90	4.68**
Part 1-Part 2	48.24	42.09	50.37	48.36	48.63	10.36**
Part 2-Part 3	49.12	46.74	48.84	46.43	48.15	2.05
Primary Business Interests Test						
Accounting	28.06	29.81	31.91	28.68	28.42	2.65*
Collection-Adjustments	10.84	11.14	11.42	11.35	10.69	.39
Sales-Office	14.27	15.35	15.06	14.12	15.48	1.94
Sales-Store	55.41	58.02	57.53	52.39	55.02	1.24
Records Management	23.22	21.65	23.30	21.92	21.91	1.93
Practical Judgment						
Factual	37.39	36.76	38.40	37.17	37.53	1.37
Social	38.73	38.35	38.58	38.01	38.09	.34
Mental Alertness	25.61	25.86	26.02	25.10	25.84	.17
Sample Size (N)	514	116	189	110	203	

Note: "F" column reports results of one-way analyses of variance across geographic areas;
* indicates $p \leq .05$; ** $p \leq .01$.

To better illustrate the directions of these relationships, means of ability variables displaying differences were ranked across geographic area (1 = highest mean). These ranked means are reported in Table 5.

The last row of Table 5 provides the mean rank for each geographic area on the 16 ability subscores which displayed significant differences. It appears that Area 5 consistently obtained the highest scores while Area 4 was rather consistent in being lowest; the other three areas fluctuate around the middle.

Table 6 offers descriptive and comparative statistics across the school size variable. The size of school not only tends to have fewer effects, but the effects follow a different pattern. Here, only the Stenographic Aptitude Test and the Mental Alertness Test are fully represented by differences.

To examine for consistency of trend, the means (excluding the single interest measure) which displayed differences were ranked across the Size variable and are presented in Table 7.

Again, the mean ranks show that medium-sized schools tend to achieve the highest scores, with small schools next and large schools last. Comparing Table 7 with Tables 1, 2, and 5 reveals some evidence for the previously described hypothesis of interaction between these two control variables. Because some of the geographic areas contain mixed sizes of schools (not to mention mixtures of urban and rural schools) and others contain no mixtures, this could not be checked. The effects of Size are pronounced enough for it to be included as a predictor measure in later treatment. Geographic area was deleted as a potential predictor both because of its confounding with size and its lack of scale qualities.

As previously mentioned, comparative percentiles and other normative data are presented in Appendix B, Tables I through XXI.

Student Questionnaire

The questionnaire, which was constructed for Project SHARP, was designed to provide two types of information: qualitative and quantitative. Qualitative information was gathered by examining the response patterns and individual responses to each of the items. Some of the more outstanding findings of this analysis will be reported in Chapter Six. All items with tallies of responses appears in Appendix C.

TABLE 5

Summary of Rank Orders on Selected Predictor Variables of Five Geographic Areas--SHARP Sample 1 (N=1132)

Variable	Area 1	Area 2	Area 3	Area 4	Area 5
Clerical Aptitude					
Part A	4	1	2	5	3
Part B	4	3	1	5	2
Part C	4	1	2	5	3
Part D	1	3	4	5	2
Part E	2	5	3	4	1
Part F	3	2	4	5	1
ERC Stenographic Aptitude					
Part I	3	5	4	2	1
Part II	1	3	4	5	2
Part III	2	4	3	5	1
Part IV	2	3	4	5	1
Part V	3	4	2	5	1
Total	3	4	2	5	1
Press Test					
Part 1	5	2	4	1	3
Part 2	4	5	3	1	2
Part 3	3	5	1	4	2
Part 1-Part 2	4	5	1	3	2
Mean Rank	3.0	3.4	2.8	4.1	1.8

TABLE 6

Mean Scores of Predictor Variables Categorized According to Size of School
SHARP Sample 1 (N 1132)

Variable	Small	Medium	Large	F
Clerical Aptitude				
Part A	57.18	54.32	54.58	5.1757**
Part B	39.67	40.20	40.08	.5071
Part C	38.55	35.61	36.08	8.9007**
Part D	59.86	62.62	58.39	3.8218*
Part E	33.31	34.91	33.35	1.8332
Part F	41.89	43.86	42.41	1.0574
ERC Stenographic Aptitude				
Part I	55.95	59.99	58.29	9.2770**
Part II	36.14	35.79	34.26	9.2650**
Part III	32.56	33.41	30.03	6.1830**
Part IV	21.79	22.14	20.25	4.3182*
Part V	147.62	163.09	140.29	26.8473**
Total	293.69	314.52	282.74	21.1040**
Press Test				
Part 1	51.03	52.08	50.62	1.3901
Part 2	49.52	50.15	49.88	.4064
Part 3	48.09	48.73	50.13	3.6764*
Part 1-Part 2	47.86	46.93	49.38	2.8565
Part 2-Part 3	47.76	48.22	50.16	4.2394*
Primary Business Interests Test				
Accounting	29.19	27.74	29.51	.9830
Collection-Adjustments	11.13	10.92	10.69	.3622
Sales-Office	14.55	15.08	14.87	.6086
Sales-Store	58.71	53.53	48.49	20.8570**
Records Management	21.99	22.34	23.03	1.6643
Practical Judgment				
Factual	37.62	37.80	36.86	2.0718
Social	38.85	39.87	35.66	21.3753**
Mental Alertness	25.48	28.47	24.33	10.7989**
Sample Size (N)	670	200	262	

Note: "F" column reports results of one-way analyses of variance across size of school; * indicates $p \leq .05$; ** $p \leq .01$.

TABLE 7

Summary of Rank Order on Selected Predictor Variables of Three School Size Categories--SHARP Sample 1 (N=1132)

Variable	Small	Medium	Large
Clerical Aptitude			
Part A	1	3	2
Part C	1	3	2
Part D	2	1	3
ERC Stenographic Aptitude			
Part I	3	1	2
Part II	1	2	3
Part III	2	1	3
Part IV	2	1	3
Part V	2	1	3
Total	2	1	3
Press Test			
Part 3	3	2	1
Part 2-Part 3	3	2	1
Social Judgment	2	1	3
Mental Alertness	2	1	3
Mean Rank	2.0	1.5	2.5

TABLE 8

Student Questionnaire Scale Characteristics

Characteristic	Scale 1	Scale 2
Items in Original Questionnaire	55	65
Items with Significant Criterion Correlation	18	24
Items in Final Scale	15	20
Maximum Possible Score	75	100
Coefficient Alpha	.63	.79
Correlation with Criterion	.34	.46
Number of Items Overlapping	11	
Sample Statistics:		
Number	1110	957
Mean	48.52	66.97
Standard Deviation	5.39	10.24

Quantitative data were obtained by creating scales from the questionnaires, as described in Chapter Two. Characteristics of the two scales are reported in Table 8, where Scale 1 is defined as that scale constructed for use with Sample 1, and Scale 2 for use with Sample 2.

In reference to Table 8, although correlations with all criteria were used for selection of the final scale items, the scale/criteria correlation reported used final grade for the respective year of study. It should also be pointed out that the coefficients alpha obtained, although somewhat inflated by single sample calculation, are of considerable magnitude for the brevity of the scales.

TABLE 9

Subsample Sizes in SHARP Samples 1 and 2
Breakdown by Status/Final Grade Criterion Classification

	SH 1 Summary			SH 2 Summary			
	WD	Pass	Fail	NE	WD	Pass	Fail
Sample 1 (N=1110)	108 9.72%	937 84.44%	65 5.85%	----	----	----	----
Sample 2 (N=956)	40 4.18%	872 91.21%	44 4.60%	262 27.40%	84 8.78%	598 62.55%	12 1.25%

Subsample Descriptions

The remainder of this chapter will be devoted to descriptions of the subsamples identified in the objectives of the study (Chapter One). To establish the relative size of these subsamples, and for convenience of comparison, Table 9 breaks down the total groups.

The percentage discrepancies between the two samples in regard to Shorthand I status deserves some comment. The differences are due primarily to a decrease in the proportion of students in Sample 2 who dropped or withdrew from Shorthand I. This decrease was caused both by the procedures used during test administration and by the actual loss of some students who moved away, dropped out of school, etc.

The research model used in SHARP eliminated from Sample 2 those who were seniors when they took Shorthand I in 1969-70. The students included in Sample 2 were those who were present for testing in September and October, 1970. Since Sample 2 was defined as those who were enrolled in Shorthand I during the 1969-70 academic year, seniors of that year would have been graduated. This causes the discrepancies apparent in Table 9.

The elimination of 1969-70 seniors, however, made it possible to treat Sample 2 data as representing students who, by virtue of their grade status, were able to enroll in Shorthand II in 1970-71.

Shorthand I Subsamples:

As indicated in Table 9, there are three primary criterion groups: Those students who withdrew or were dropped from Shorthand I (WD); students who passed Shorthand I (Pass); and students who failed Shorthand I (Fail). Sample 1 mean scores on the predictor variables have been broken down by this status/final grade classification and are presented in Table 10.

No analyses of variance were performed on the data in Table 10 because the step-wise multiple regression analyses which are presented in Chapter Five make such comparisons superfluous. However, it is important to note that of the ability tests used (Clerical Aptitude; Stenographic Aptitude; Practical Judgment; and Mental Alertness), thirteen of the fifteen subscores yielded consistent results, with the WD group falling somewhere between the Pass group (highest) and the Fail group (lowest). This finding can be expected, as the WD group is a heterogeneous subsample caused by the various reasons for dropping or withdrawing from Shorthand I. This fact has important ramifications for the predictive phases of this investigation since WD and Fail subsamples could not then be combined into the "unsuccessful" grouping for a dichotomous criterion variable. This point will be enlarged upon in Chapter Six.

Similar descriptions are presented in Table 11 for Sample 2. In the examination of Table 3, the majority of the ability measures reflected significant differences between Sample 1 and Sample 2, with Sample 2 showing higher mean scores. Therefore, Table 11 should be examined in terms of the differences observed across criterion groups rather than in comparison with the data presented in Table 10.

Focusing on only the ability measures, the results are quite similar to those found for Sample 1. Ten of the fifteen measures demonstrated that the WD group fell somewhere between the Pass group and the Fail group. As such, the findings reported in Tables 10 and 11 led to the conclusion that some of the ability measures discriminated among the criterion groups, at least as far as Shorthand I criteria were concerned.

Also reflected was the similarity of results across Samples 1 and 2. It was stated earlier that, because data were analyzed for only those students who were tested as part of the study, students were eliminated who had been seniors during their first year of shorthand, had left school, or who had simply failed to participate in the study. This created the discrepancy in the relative size of the WD groups within Samples 1 and 2. However, Tables 10 and 11 indicate that, based on those students included in the investigation, Samples 1 and 2 did not differ in the relationship of predictors to Shorthand I criteria. This fact allowed the extrapolation from the Shorthand I (SH I) data to the prediction of Shorthand II (SH II) success.

TABLE 10

Mean Scores on Predictor Variables (Including Questionnaire) Categorized According to Shorthand I Status/Final Grade--SHARP Sample 1 (N=1110)

Variable	WD	Pass	Fail
Questionnaire	44.48	49.13	45.46
Clerical Aptitude			
Part A	52.51	56.80	49.97
Part B	37.93	40.29	36.65
Part C	35.74	38.24	29.54
Part D	58.49	60.88	50.71
Part E	32.95	34.03	29.23
Part F	40.25	43.34	33.51
ERC Stenographic Aptitude			
Part I	55.06	57.72	55.69
Part II	33.21	36.24	31.14
Part III	29.02	33.22	22.11
Part IV	19.03	22.09	17.32
Part V	143.11	151.09	129.42
Total	280.48	299.97	255.77
Press Test			
Part 1	51.19	51.23	48.89
Part 2	49.78	49.95	46.88
Part 3	48.71	48.94	45.48
Part 1-Part 2	47.71	48.24	47.71
Part 2-Part 3	48.34	48.36	48.78
Primary Business Interests Test			
Accounting	25.06	29.59	25.98
Collection-Adjustments	12.14	10.87	11.17
Sales-Office	13.98	14.85	14.43
Sales-Store	53.87	55.84	52.46
Records Management	19.94	22.61	20.65
Practical Judgment			
Factual	36.22	37.81	34.94
Social	35.73	38.76	36.31
Mental Alertness	21.54	26.79	18.66
Sample Size (N)	108	937	65

TABLE 11

Mean Scores on Predictor Variables (Including Questionnaire) Categorized According to Shorthand I Status/Final Grade--SHARP Sample 2 (N=956)

Variable	WD	Pass	Fail
Questionnaire	51.70	68.15	54.77
Clerical Aptitude			
Part A	51.49	61.07	57.20
Part B	37.46	43.22	40.18
Part C	33.08	41.42	34.77
Part D	58.41	67.04	61.57
Part E	36.65	38.36	29.41
Part F	43.38	46.75	35.27
ERC Stenographic Aptitude			
Part I	55.73	59.76	58.20
Part II	33.92	36.89	31.75
Part III	29.73	35.92	23.84
Part IV	20.19	22.62	18.27
Part V	157.03	168.25	140.61
Total	296.68	322.88	272.75
Primary Business Interests Test			
Accounting	22.05	26.34	24.41
Collection-Adjustments	13.46	11.59	10.98
Sales-Office	13.65	15.42	13.07
Sales-Store	57.29	59.86	54.34
Records Management	20.19	23.36	18.79
Practical Judgment			
Factual	37.83	38.95	34.75
Social	38.16	39.62	34.22
Mental Alertness	23.38	27.84	20.18
Sample Size (N)	40	872	44

Shorthand II Subsamples:

As Table 9 indicated, students in Sample 2 have been categorized into one of four criterion subgroups: those students who did not enroll in Shorthand II (NE); those who enrolled in Shorthand II but withdrew or were dropped (WD); those who enrolled in Shorthand II and passed (PASS); and those who enrolled in Shorthand II but failed (FAIL). The confounding of the WD classification, as well as the ambiguity in the eligibility of the Shorthand I failures and WD's to enroll in Shorthand II, altered the intended analyses of the achievement measures for Shorthand II subgroups. Two separate methods were, therefore, used in the attempt to describe differences. The first was an examination of scores on the administered measures classified according to Enrolled/Not Enrolled Status; included in this presentation are only those Sample 2 students who successfully completed (passed) Shorthand I. By excluding students who withdrew, dropped, or failed Shorthand I, it was guaranteed that all students included were eligible to enroll in Shorthand II. These data are presented in Table 12.

Study of Table 12 indicates that thirteen of the fifteen ability test score comparisons yielded significant differences, with the Enrolled subsample displaying higher mean scores. Because the Not Enrolled subsample is comprised of only those students who had successfully completed Shorthand I, it is not contaminated by the Shorthand I Status/Final Grade differences presented in Table 11.

The data show that the ability tests can, to some extent, differentiate between students who enroll in Shorthand II and those who do not. Whether or not this relationship is mediated by Shorthand I grades will be examined in the following section. At this point, evidence indicates that the enrolled and not enrolled groups differ significantly on the potential predictive measures.

To provide a complete description of the various Shorthand II subsamples, the means of the test scores are presented in Table 13 for the Not Enrolled (including Shorthand I WD's and Fails), WD, Pass, and Fail subgroups.

Table 13 provides several important results. First, eleven of the fifteen ability subscores reflected an identical ordering of the four criterion subsamples: Pass group was the highest, WD the next highest, with the NE and Fail groups following. A similar Pass-WD-Fail ordering occurred when the Shorthand I subgroups were examined. Particularly noteworthy is the relative position of the NE group. The performance of this on the ability measures demonstrates that the NE group was generally lower than the WD group, suggesting that actual ability (or self-perceived ability) may be a major determinant of enrolling in the Shorthand II curriculum. The data from the questionnaire also related to this proposition; the NE group had a lower mean score than the WD subgroup on this variable. The hypothesis evolving from these findings will be presented in Chapter Six.

TABLE 12

Mean Scores of Predictor Variables Categorized According to Enrolled/Not Enrolled Status in Shorthand II--SHARP Sample 2 (N=792)

Variable	Enrolled			Not Enrolled		
	Mean	Standard Deviation	r	Mean	Standard Deviation	t
Clerical Aptitude						
Part A	61.69	13.64	-.098	58.54	14.10	2.77**
Part B	44.02	8.13	-.164	40.92	7.76	4.67**
Part C	41.98	10.95	-.094	39.53	11.95	2.65**
Part D	68.59	17.51	-.131	63.07	19.36	3.72**
Part E	38.93	10.07	-.109	36.31	10.80	3.09**
Part F	47.51	17.92	-.097	43.52	16.92	2.73**
ERC Stenographic Aptitude						
Part I	59.99	11.23	-.018	59.49	12.68	.52
Part II	37.49	5.62	-.178	35.11	5.79	5.09**
Part III	37.89	9.41	-.309	30.36	11.57	9.13**
Part IV	23.19	7.88	-.106	21.29	7.17	2.98**
Part V	172.17	25.34	-.310	152.94	25.74	9.15**
Total	329.97	39.34	-.316	298.81	43.22	9.36**
Primary Business Interests Test						
Accounting	25.37	14.08	+.072	27.81	16.16	-2.02*
Collection-Adjustments	11.76	7.22	-.050	10.92	7.25	1.41
Sales-Office	15.70	6.27	-.067	14.72	6.56	1.89
Sales-Store	59.27	20.62	+.039	61.15	21.82	-1.09
Records Management	24.75	6.89	-.272	20.00	8.28	7.93**
Practical Judgment						
Social	39.60	6.15	-.008	39.48	6.53	.23
Factual	39.16	5.67	-.078	38.12	5.76	2.21*
Mental Alertness	28.46	9.57	-.102	26.15	9.97	2.89**
Sample Size (N)	597			195		

Note: "t" column reports results of t tests between the Enrolled and Not Enrolled subsamples. "r" column reports point-biserial correlations of test score and Enrolled/Not Enrolled Status. * indicates $p \leq .05$; ** $p \leq .01$ (significance levels for "r" are the same as those indicated for the corresponding t value)

TABLE 13

Mean Scores of Predictor Variables Categorized According to Shorthand II Status/Final Grade--SHARP Sample 2 (N=956)

Variable	NE	WD	Pass	Fail
Questionnaire	59.03	64.51	70.88	56.83
Clerical Aptitude				
Part A	57.69	62.13	61.81	46.08
Part B	40.52	42.42	44.15	31.75
Part C	38.64	42.01	41.98	33.25
Part D	62.53	64.37	68.67	53.58
Part E	35.12	38.74	39.00	26.17
Part F	42.16	49.44	47.67	30.67
ERC Stenographic Aptitude				
Part I	58.78	58.87	60.04	54.67
Part II	34.38	36.50	37.48	31.75
Part III	29.69	34.18	37.78	26.67
Part IV	20.90	21.18	23.16	19.58
Part V	151.19	176.46	172.23	149.33
Total	294.87	327.73	329.94	282.00
Primary Business Interests Test				
Accounting	26.46	30.13	25.61	16.00
Collection-Adjustments	11.45	11.61	11.72	11.25
Sales-Office	14.13	15.50	15.78	12.00
Sales-Store	60.33	58.89	59.13	59.33
Records Management	19.62	21.32	24.76	21.25
Practical Judgment				
Factual	37.79	38.56	39.11	38.58
Social	38.89	39.35	39.52	37.33
Mental Alertness	24.91	27.05	28.52	20.42
Sample Size (N)	262	84	262	12

CHAPTER V

RESULTS: PREDICTIVE

The method used to examine the extent to which the criteria could be predicted by a combination of the measurement variables was a step-wise multiple regression analysis. This model first selects the single best predictor, then builds the combination by adding or subtracting one more predictor at each step until no significant variance may be added by any remaining predictor. The measures included in the predictor matrix are the twenty-five subscores of the administered tests, the school size variable, and the questionnaire scales.

Before presenting the results of the step-wise regression analyses, an examination of the developed questionnaire scales will be made. Table 14 presents the correlation of each item comprising the scales with the appropriately used criterion (Shorthand I Final Grades for Sample 1; Shorthand II Final Grades for Sample 2).

As previously mentioned, selection of the items was based not only on the demonstrated statistically significant relationship to the criteria measures, but also on the nature of the item. That is, only items which characteristically could be asked an eligible Shorthand I or Shorthand II student were included. A few correlations are negative in sign. For purposes of scale construction (the summation of item scores across all included items to arrive at a total scale score), these items were given a "reverse" direction in scoring. As such, a high value for an item reflects the positive relationship existing between that item and the criterion; summation of forward and reverse items was therefore uncontaminated.

With the development of the questionnaire Scales 1 and 2, there were twenty-seven potential predictor measures of Shorthand I Final Grades (SHIFGR), including School Size, for Sample 1. Also, there were twenty-three potential predictor measures of Shorthand II Final Grades, including School Size and the SHIFGR variable, for Sample 2. Correlations of these measures with the appropriate criteria are presented in Table 15.

TABLE 14

Item-Criterion Correlations of Items Comprising Questionnaire Scales 1 and 2

Scale 1			Scale 2		
Item #	Correlation	N	Item #	Correlation	N
		Overlapping Items			
8	.08**	(1003)	8	.14**	(609)
17	.12**	(1002)	17	.12**	(610)
18	.17**	(1002)	18	.17**	(609)
24	.18**	(1002)	24	.14**	(610)
30	.18**	(999)	30	.15**	(610)
31	.27**	(1002)	31	.25**	(610)
33	.29**	(998)	33	.26**	(601)
34	-.40**	(997)	34	-.40**	(607)
35	.11**	(1001)	35	.23**	(608)
39	.18**	(999)	39	.20**	(609)
54	.19**	(975)	54	.09**	(606)
		Unique Items			
9	.05	(1003)	16	-.07*	(610)
15	.06*	(1002)	32	.09**	(610)
37	.12**	(1000)	41	.07*	(610)
55	.13**	(971)	51	-.12**	(605)
			56	.24**	(604)
			57	.23**	(604)
			61	.14**	(603)
			62	.15**	(602)
			65	.20**	(590)
		Criteria			
SH I Final Grade			SH II Final Grade		

Note: "N" column denotes number of complete pairs on which correlation is based; * indicates $p \leq .05$; ** $p \leq .01$.

TABLE 15

Correlations of Potential Predictor Variables with Criteria--
SHARP Sample 1 (N=1002) and SHARP Sample 2 (N=605)

Variable (Criterion:)	Sample 1 (SH I Final Grade)	Sample 2 (SH II Final Grade)
Questionnaire Scale 1	.34**	---
Questionnaire Scale 2	---	.46**
Clerical Aptitude		
Part A: Numerical perception	.21**	.25**
Part B: Verbal perception	.28**	.28**
Part C: Numerical reasoning I	.29**	.28**
Part D: Filing speed and accuracy	.28**	.26**
Part E: Verbal reasoning	.19**	.29**
Part F: Numerical reasoning II	.27**	.30**
ERC Stenographic Aptitude		
Part I: Speed of writing	.17**	.15**
Part II: Word discrimination	.39**	.37**
Part III: Phonetic spelling	.44**	.42**
Part IV: Vocabulary	.31**	.27**
Part V: Dictation (longhand)	.28**	.33**
Total	.39**	.38**
Press Test		
Part 1: Reading speed	.15**	---
Part 2: Color-naming speed	.24**	---
Part 3: Color-naming speed with distraction	.23**	---
Part 1-Part 2: Difference between reading speed and color-naming speed	.08**	---
Part 2-Part 3: Difference between color-naming speed with and without distraction	-.01	---
Primary Business Interests Test		
Accounting	.09**	.15**
Collection-Adjustments	-.04	-.14**
Sales-Office	.05	-.00
Sales-Store	.00	-.05
Records Management	.09**	.17**
Practical Judgment		
Factual	.24**	.21**
Social	.16**	.24**
Mental Alertness	.39**	.33**
School Size	-.12**	-.07**
Shorthand I Final Grade	---	.65**

Note: * indicates $p \leq .05$; ** $p \leq .01$.

Only those Sample 1 students who received a final grade in Shorthand I were included: only those Sample 2 students who received a final grade in both Shorthand I and Shorthand II were included. Examination of Table 15 indicates that all part scores of the Clerical Aptitude Test, the Stenographic Aptitude Test, and the Test of Practical Judgment demonstrated a significant relationship to the criteria of both Sample 1 and Sample 2.

School Size, the appropriate Questionnaire Scale, Mental Alertness Test, and the Accounting and Records Management subscores of the Primary Business Interests Test also showed significant criterion correlations for both samples. The Collection-Adjustments subscore was significant for Sample 2, while the first four subscores of the Press Test displayed significant criterion relationship for Sample 1.

It appears that most of the potential predictor measures are individually related to the criteria. However, upon combining these measures, a high degree of shared variance among predictors was expected. In an effort to determine the sequence of step-wise regression analyses to predict successful completion of shorthand, inter-criteria correlations were computed.

Using Sample 2 for these analyses, the obtained correlation between Shorthand I Final Grade and Shorthand II Final Grade was .65 ($p \leq .01$) and that between Shorthand I Final Grade and Shorthand II Enrolled/Not Enrolled Status was -.42 ($p < .01$). The negative correlation between Shorthand I Final Grade and Shorthand II Status is an artifact of the coding system; a code of "1" was assigned to the Enrolled students and a "3" code was assigned to the Not Enrolled.

The significant correlation between Shorthand I Final Grade and Shorthand II Final Grade added justification to the rationale of attempting to predict Shorthand I Grades as the major focus; the prediction of Shorthand II Final Grades could then include the Shorthand I Final Grade as a predictor. The following sections present the sequence of step-wise regression analyses conducted.

Sample 1: Shorthand I Prediction

Of initial concern to the investigation was the extent of the prediction of a Pass/Fail dichotomy of Shorthand I final grades. All final Shorthand I grades were therefore coded in this method and entered, along with the twenty-seven predictor variables, in a step-wise regression model. This model allows for the inclusion

or exclusion of one variable at each step until no significant unique variance can be obtained. The results of this analysis include eighteen predictors and yielded a maximum correlation coefficient (R) of .32.

Examination of the full grade distribution suggested that prediction could be increased by including the continuum (from A to E or F) in the equation instead of artificially dichotomizing and restricting range. To test this hypothesis, final grades were entered into the model with all predictors. This analysis yielded a maximum R of .57, which justifies the use of this expanded criterion for the purposes of this study. For the purposes of comparison, the complete dichotomous criterion step-wise results are presented in Appendix D, with the continuous criterion results.

A comparison of these tables reveals that the Press Test, as a whole, is not a significant contributor to prediction. With both criteria, more than half of the Press Test subscores were deleted from the final equation. Economically as well as practically, these results indicate that the test should not be considered in future analyses. The purchase and administration of a complex test is not warranted by the contribution made of just one or two of its subscores.

Statisticians will have already noted that any final equation cannot include both the part and total scores of the ERC Stenographic Aptitude Test. Because the total score is a mere summation of the part scores, covariances among them and among other variables are confounded when both sets are included. The two initial runs included both to determine which set was the better predictor. Examination of each of the twenty-three steps in the analyses indicated that the total score should be excluded from any further consideration.

Deletion of any variables from a multiple correlation affects the contribution and entry point of the remaining variables. Thus, a new equation must be computed. The remaining twenty-one variables were entered, with the continuous grade criterion, into the step-wise model; the results are given in Table 16.

TABLE 16

Summary of Step-Wise Multiple Regression Analysis of Potential Predictor Variables--
Criterion: Shorthand I Final Grade--SHARP Sample 1 (N=1002)

Step Number	Variable	Cumulative R	F value
1	ERC-III: Phonetic Spelling	.4406	240.85**
2	Questionnaire Scale 1	.5070	84.71**
3	Mental Alertness	.5270	28.53**
4	School Size	.5354	12.39**
5	CA-B: Verbal Perception	.5430	11.69**
6	ERC-I: Speed of Writing	.5478	7.34**
7	ERC-II: Word Discrimination	.5506	4.51*
8	CA-E: Verbal Reasoning	.5539	5.17*
9	PBIT-1: Accounting	.5569	4.74*
10	PBIT-3: Sales-Office	.5599	4.85*
11	Factual Judgment	.5615	2.67
12	PBIT-5: Records Management	.5630	2.38
13	CA-C: Numerical Reasoning I	.5636	1.08
14	CA-F: Numerical Reasoning II	.5642	.83
15	PBIT-2: Collection-Adjustments	.5645	.57
16	ERC-V: Dictation (longhand)	.5648	.41
17	PBIT-4: Sales-Store	.5649	.25
18	Social Judgment	.5650	.09
19	CA-A: Numerical Perception	.5650	.07

Variables Remaining

CA-D: Filing Speed and Accuracy
ERC-IV: Vocabulary

Note: * indicates $p \leq .05$; ** $p \leq .01$

In Table 16, the variables are arranged in order as they entered the equation. At each step, the multiple correlation (R) for the weighted combination of included variables is given, along with a test of significance (F) for the new step. The correlation with criterion is statistically significant ($p < .01$) from the first step; the F-values indicate the significance of adding another variable. For research purposes, variables were permitted to enter after they ceased contributing significantly.

Table 16 reveals that the first entry, ERC-III, displays an individual correlation of .44 with the criterion; addition of nine more predictors increases this correlation to .56. Although a correlation coefficient is merely an index number, the relationship between variables can be determined by its square, the Coefficient of Multiple Determination. The square of the ten-variable R is .31, which indicates that 31 per cent of the variance in the criterion can be predicted by the weighted combination of these variables. Similarly, the coefficient of determination for the one-variable equation is .19, or 19 per cent.

Because the R was computed from a single sample of students there is a probability that it includes some "error variance," i. e., a slight over-estimate due to chance factors. A statistical formula to correct for this was applied, and the "shrunken" R was .5543.

It has been mentioned that a multiple regression equation maximizes prediction by using a weighted combination of predictor variables. Application of the equation involves a summation of each score variable multiplied by its optimal weight. In this case, if X' indicates predicted grade in Shorthand I with A = 5, B = 4, to E (or F) = 1, the regression equation is:

$$X' = -1.422 - .141(\text{SIZE}) + .047(\text{Ques.}-1) + .015(\text{CA-B}) - .008(\text{CA-E}) + .009(\text{ERC-I}) + .022(\text{ERC-II}) + .025(\text{ERC-III}) + .007(\text{PBIT-1}) - .012(\text{PBIT-3}) + .017(\text{MA})$$

In reference to the interpretation of any multiple regression equation, it is pertinent to point out that the obtained partial regression coefficients (weights) do not necessarily bear any relation to the proportion of variance accounted for. Because each variable is measured in its own scale units (raw scores, size code, etc.), the actual contribution to prediction is a function not only of the coefficient, but also of the variances of the criterion and the given predictor.

The analysis of regression components is a complex process, but an example may be instructive. Numerically, the weight for SIZE is almost six times as large as that for ERC-III; however, in the final equation, SIZE accounts for only one per cent of the total criterion variance while ERC-III accounts for ten per cent. This example may also demonstrate the effects of "shared variance." ERC-III, as a single predictor, accounted for 19 per cent of the criterion variance, while it accounts for only 10 per cent in the equation. This reduction is due to the inclusion of other variables which better predict some of the variance shared by ERC-III and the criterion.

For practical purposes of application, the preceding equation, when completed with a student's raw scores, is all that is necessary to predict his final grade in Shorthand I within 1.01 points two out of three times. This latter figure, the Standard Error of Estimate, assumes use of a similar population.

Sample 2: Shorthand II Prediction

As an intermediate stage in the predictive model-building, an effort was made to predict the Status in Shorthand II, using Sample 2 students. To do this effectively, certain aspects of the analysis were important. Shorthand II Status, the criterion for this analysis, was limited to an Enrolled/Not Enrolled dichotomy. Any Sample 2 student who withdrew or dropped from Shorthand II was excluded from the analysis, since it was known that a number of the WD's actually had never participated in Shorthand II, but rather, withdrew or dropped Shorthand II before class began; (that is, during the summer of 1970).

Secondly, since Shorthand I Final Grade was to be used as a potential predictor, only those Sample 2 students who passed Shorthand I were included.

The Questionnaire Scale 2 variable was deleted from consideration for the predition of Shorthand II Status because it may be thought an ex post facto measure because it was designed to be administered only after the completion of Shorthand I. In most cases, the decision to enroll or not enroll is already made by that time; therefore, Scale 2 cannot rationally be used as a predictor. The distinction may be drawn between this and the other measures, all of which can be, and were, administered to entering Shorthand I students.

Following the same procedure as that outlined for the Shorthand I results, the step-wise regression findings for the prediction of Shorthand II Status are presented in Table 17.

TABLE 17

Summary of Step-Wise Multiple Regression Analysis of Potential Predictor Variables--Criterion: Shorthand II Enrolled/Not Enrolled Status--SHARP Sample 2 (N=956)

Step Number	Variable	Cumulative R	F value
1	Shorthand I Final Grade	.4220	170.51**
2	PBIT-5: Records Management	.4633	36.63**
3	ERC-V: Dictation (longhand)	.4942	30.68**
4	PBIT-1: Accounting	.5135	20.74**
5	School Size	.5284	16.83**
6	Social Judgment	.5355	8.34**
7	ERC-III: Phonetic Spelling	.5391	4.25*
8	Mental Alertness	.5451	7.18**
9	PBIT-2: Collection-Adjustments	.5476	3.07
10	PBIT-3: Sales-Office	.5487	1.33
11	ERC-I: Speed of Writing	.5499	1.48
12	PBIT-4: Sales-Store	.5511	1.44
13	ERC-IV: Vocabulary	.5523	1.49
14	CA-D: Filing Speed and Accuracy	.5531	1.04
15	Factual Judgment	.5540	1.03
16	CA-A: Numerical Perception	.5544	.47
17	ERC-II: Word Discrimination	.5546	.25
18	CA-F: Numerical Reasoning II	.5548	.23
19	CA-C: Numerical Reasoning I	.5549	.19
20	CA-B: Verbal Perception	.5550	.08

Variable Remaining

CA-E: Verbal Reasoning

Note: * indicates $p \leq .05$; ** $p \leq .01$

Examination of Table 17 indicates that the first entry, Shorthand I Final Grade, shows an individual correlation of .42 ($p \leq .01$) with the Status criterion; and the significant addition of seven more predictors increases R to .55. The Coefficient of Multiple Determination for the eight-variable equation is .30; and for the one-variable equation it is .18. Thus, an increase of 12 per cent in the amount of predictable variance is Shorthand II Status can be realized by including all significant variables in the equation. R, corrected for shrinkage, is .54, and the standard error of estimate for the eight-variable equation is .73. With X' representing the predicted Shorthand II Status (Enrolled = 1; Not Enrolled = 3), the regression equation is:

$$X' = 3.788 - .119(SIZE) - .279(SH1FGR)$$
$$- .010(ERC\text{-}III) - .006(ERC\text{-}V) + .006(PBIT\text{-}1)$$
$$- .022(PBIT\text{-}5) + .011(SJ) + .009(MA)$$

The final step-wise regression analysis performed on the Sample 2 data attempted to determine the extent to which the Shorthand II Final Grade could be predicted from the combination of test measures, school size variable, and Shorthand I Final Grades. The results of the analysis of these twenty-two potential predictors of the Shorthand II Final Grade criterion are presented in Table 18.

Inspection of Table 18 reveals that the first entry, Shorthand I Final Grade, with an R of .65 ($p \leq .01$), accounts for 42 per cent of the variance in Shorthand II Final Grades. The six significant added variables increase R to .71, with a corresponding increase of the Coefficient of Multiple Determination to .50, or 50 per cent of the variance in Shorthand II Final Grade. R, after correction for shrinkage, is maintained at .71. The regression equation, with a standard error of estimate of .73, for X' (Shorthand II Final Grade with A = 5, B = 4, to E or F = 1), is:

$$X' = -1.493 + .016(Ques.\text{-}2) + .498(SH1FGR)$$
$$+ 006(ERC\text{-}I) + .014(ERC\text{-}II) + .010(ERC\text{-}III)$$
$$+ .005(ERC\text{-}V) - .010(PBIT\text{-}2)$$

TABLE 18

Summary of Step-Wise Regression Analysis of Potential Predictor Variables--
Criterion: Shorthand II Final Grade--SHARP Sample 2 (N=956)

Step Number	Variable	Cumulative R	F value
1	Shorthand I Final Grade	.6518	445.43**
2	ERC-III: Phonetic Spelling	.6727	30.42**
3	Questionnaire Scale 2	.6867	21.62**
4	ERC-V: Dictation (longhand)	.6990	20.08**
5	PBIT-2: Collection-Adjustments	.7027	6.09*
6	ERC-I: Speed of Writing	.7055	4.65*
7	ERC-II: Word Discrimination	.7080	4.29*
8	CA-E: Verbal Reasoning	.7092	2.04
9	PBIT-4: Sales-Store	.7103	1.79
10	PBIT-5: Records Management	.7112	1.61
11	PBIT-3: Sales-Office	.7122	1.65
12	CA-D: Filing Speed and Accuracy	.7131	1.56
13	CA-B: Verbal Perception	.7144	2.27
14	PBIT-1: Accounting	.7152	1.45
15	Social Judgment	.7157	.71
16	CA-F: Numerical Reasoning II	.7160	.62
17	School Size	.7162	.25
18	ERC-IV: Vocabulary	.7162	.12
19	Factual Judgment	.7163	.07

Variables Remaining

CA-A: Numerical Perception
CA-C: Numerical Reasoning I
Mental Alertness

Note: * indicates $p \leq .05$; ** $p \leq .01$

CHAPTER VI

DISCUSSION

Referring to the comparative/descriptive data presented in Chapter IV, several findings warrant further elaboration. Table 3 indicated that most of the measures displayed significant differences between Sample 1 and Sample 2 students, with the Sample 2 students having higher mean scores. The Primary Business Interest Test subscales, however, displayed in general the weakest significant increase from Sample 1 to Sample 2, and in the case of the Accounting scale, showed a significant decrease.

These findings are compatible with what is generally found for interest measures which, in relation to achievement measures (ability tests), demonstrate little or no increase that can be attributed to slight differences in age and/or education level. The differences obtained on the achievement measures were also expected because performance on these tests is usually affected by the practice of these and similar abilities experienced in the Shorthand I course.

The differences obtained across Geographic Area were consistent, with Area 5 scoring the highest and Area 4 the lowest on those measures which displayed significant differences. If all cells of the Geographic-Area-by-Size cross-breakdown had had sufficient sample sizes, analysis of the Geographic-Area-by-Size interaction would most likely have revealed a strong relationship to performance on the various measures. As it was, only the Size variable could be included as a potential predictor in the step-wise regression analyses.

When examining Table 9, it was mentioned that the observed attrition rate was lower than that normally reported, and that the data collection procedures followed in this study were responsible for the discrepancy. No members of Sample 2 who were seniors during Shorthand I were available at the time of testing, and because of their absence, the percentage of Not Enrolled in Shorthand II was deflated. Twelve per cent of Sample 1 students were seniors, and it is assumed that this percentage approximates the per cent of Sample 2 students who had taken Shorthand I in 1969-70, during their senior year.

Upon examining the score distributions according to Shorthand I Status/Final Grade classification, it was evidenced that the WD subsample was a heterogeneous grouping of students, at least on the basis of the potential predictor measures. This fact was demonstrated by the variability of reasons for not enrolling in the Shorthand II course--interests, abilities, motivations, and attitudes. This heterogeneity view concerning the WD subsample was supported by the Sample 2 data which was presented in Table 11, and was further defined by hypothesizing from the results reported in Table 13, in which the Status/Final Grade classification was according to Shorthand II categories.

It appears possible that, of the factors influencing whether or not an individual enrolls in Shorthand II, after successfully completing Shorthand I, the actual or self-perceived ability of the student might be most important. Examination of Table 13 indicated that students who did not enroll in Shorthand II (the NE group) scored lower than the WD subsample. The hypothesis evolving from this observation is that students perceive themselves as competent enough to satisfactorily perform in Shorthand II or they do not. Those who perceive themselves as possessing, or, in fact, possess the necessary abilities enroll and, in most cases, successfully complete Shorthand II. Those who view themselves as possessing little competency do not enroll; those students who think that they may have the necessary credentials enroll, but quite often withdraw or drop from the course when it becomes apparent that they misjudged their abilities. This hypothesis would not evolve from the analysis of the interest scales of the Primary Business Interest Test; thus, the specificity of the formulation to the ability measures.

Examination of responses to the questionnaire revealed some interesting results. (Response percentages for all items are presented in Appendix C.) For example, in the response to the question: "What would profit you most in learning shorthand?" 46 per cent of Sample 2 students answered, "working by myself with tape recorded practice," and 22 per cent said, "after learning the basics, being put on a job." Sample 1 students, on the other hand, were evenly distributed across all responses, with 28 per cent answering "learning by myself from the book." (Item 42).

Responses to questions concerning direction received from guidance counselors in selecting shorthand (Items 4 - 6) were interpreted as reflecting the lack of interaction between students and counselors. (Thirty eight per cent of the shorthand students spent less than one-half hour discussing course selection, with another 47 per cent spending no time at all.) Sample 2 students most enjoyed "reading shorthand" (47 per cent), while 23 per cent most enjoyed

"taking dictation." Item 63 reveals that there is a relatively high degree of variability in the percentage of total class time spent during the last three months of Shorthand I in transcribing from shorthand notes to English, with 87 per cent of the respondents spending anywhere from 10 per cent to more than 50 per cent of the class time in transcription.

The information obtained from the scalable items in the questionnaire is presented in Table 14. Relating responses of non-scalable items to the various criteria measures was beyond the scope of this report, as was investigating the inter-relationship among items.

Two or three points of significance stand out regarding the Questionnaire scales developed for this study. The magnitude of the coefficients alpha reflect the stability required for predictive measurement; the unique contribution is evidenced by its inclusion in the two major regression coefficients. The single item demonstrating the highest criterion correlation in both scales is Item 40. This asks the student to predict what grade he will obtain in shorthand, and shows a high relationship to the grade he does obtain. Although this "self-prediction" has been shown to be significant in other studies, no single explanation has received consensus. The hypotheses range from the "self-fulfilling prophecy" to the accuracy of self-judgment with consideration to motivation, etc. The present study offers no solution, but adds support to the inclusion of such items in other instruments.

A comparison of Tables 15 and 16 reveals some interesting aspects of multiple regression. Considering only the prediction of Shorthand I grades, and excluding the Press Test and ERC-Total, eighteen variables demonstrated significant relationships with the criterion. If these variables contained only unique variance toward this prediction, all would be included in an equation; this result is mathematically impossible. Instead, most of the predictors share some common variance with other predictors and the criterion. The inclusion of several such predictors can count the shared variance only once, thus reducing most of the original correlations.

The prime determinant for inclusion in the final equation is the amount of unique predictive variance contributed after some of the shared variance has been partialled out. This is why an examination of Table 15 is of little use in prophesying the final multiple regression equation. For example, PBIT-3 is included in the equation although it is numerically lower than nine of the excluded

variables and is not even statistically significant. Conversely, ERC-IV is excluded even though its individual correlation is higher than six of the included variables.

The Press Test was eliminated from the final equation although four of its subscores displayed significant individual relationships with the criterion. This may be interpreted as revealing little or no unique variance. Some indication of the amount of shared variance may be gleaned from considering PR-2, which demonstrates the highest criterion correlation (.24). This variable shows numerically higher correlations with fourteen of the other predictors.

Readers familiar with some of the published interests tests may be concerned about the lack of significantly negative criterion correlations for parts 2-4 of the Primary Business Interests Test. This is because the Primary Business Interests Test is only partly ipsative, unlike some of its counterparts.

Use of the obtained multiple regression equation for the prediction of Shorthand I grades is a relatively easy matter. Given the nine required scores and the school size code, the predicted grade can be computed in minutes. If the tests are computer scored, the equation can be built into the scoring program and provide results in seconds.

For hand use, the equation can be recomputed holding school size constant, thus deleting one variable. By giving only the required subtests of the Clerical Aptitude and Stenographic Aptitude Tests, and the full Questionnaire, Primary Business Interests Test, and Mental Alertness Test, necessary testing time is approximately two hours.

Comparison of the regression equations for the prediction of status and final grades in Shorthand II provides some interesting conclusions. Only three predictors (SHIFGR, ERC-III, ERC-V) were included in both equations, and none of the Clerical Aptitude subtests were included in either. The most significant individual predictor in both cases was final grade in Shorthand I (SHIFGR), as may have been expected. This finding supports the adage that the best predictor of future performance is past performance. In view of the fact that the test battery for the final equations would require about two hours, as well as the relatively slight increase in prediction, use of the complete process is probably not economically feasible. The SHIFGR and SIZE, considered together, have an R of .44 with Status.

Although the prediction of status in Shorthand II was originally considered a byproduct of this investigation, interim findings suggest it is worthy of further study. Final grades in Shorthand II are fairly well predicted by the Shorthand I grades, but more significantly, descriptive findings show that of those students who enroll in Shorthand II (excluding the confounding group of WD's), only 1.97 per cent fail. Thus, if curriculum interest is in a Pass versus Fail criterion, the fact of being enrolled gives a 92 per cent probability of passing.

The status criterion, now considered more important, was the most difficult to predict, as evidenced by the lowest R. Examination of some of the predictors may prove helpful. Individual criterion correlations may be found in Table 12 and compared with those for the Shorthand II grade criterion in Table 15. Because of the coding procedure for status (0 = Enrolled; 3 = Not enrolled), negative correlations demonstrate a conceptually positive relationship; i. e., the higher scores are related with enrolling.

With this in mind, attention is given to variables whose correlations do not change sign with the two criteria: SIZE; PBIT-1; PBIT-2; PBIT-3. The last two of these variables can be deleted from consideration because correlations not reaching statistical significance are treated as zero relationships. Those who score high on PBIT-1 (accounting interests) tend to avoid enrolling, but if they do enroll, will be apt to get high grades. This suggests that persons with interest in accounting are capable of performing well in shorthand but frequently choose other courses.

The SIZE variable may lead to several interpretations. Students in the larger schools tend to enroll in Shorthand II and to get lower grades. One possible explanation for this is that teachers in smaller schools are able to provide more personalized counselling, and discourage more of their poor students from continuing into the second year.

It is apparent that, with good prediction of Shorthand I final grades, the prediction of second year status becomes feasible. Estimates based on shared variance suggest that adequate prediction may be obtained from elements of the test battery given to Sample 1 students. Although the time limitation of the present study did not allow collecting status information on this sample, it is recommended that these data be gathered. It would involve obtaining enrolled/not enrolled information from school records during the current year and analyzing it for possible prediction from the original test scores.

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APPENDIX A

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SCHOOLS (AND COUNTIES) SELECTED FOR THE PROGRAM

SMALL:	Low Attrition	High Attrition
	Cambria Heights SHS (Cambria)	Clarion-Limestone HS (Clarion)
	Tulpehocken Area JSHS (Berks)	Waynesburg SHS (Greene)
	Purchase Line JSHS (Indiana)	Kennard-Dale JSHS (York)
	North Pocono HS (Lackawanna)	Phoenixville Area SHS (Chester)
	Parkland SHS (Lehigh)	Cumberland Valley SHS (Cumberland)
	James Buchanan SHS (Franklin)	Penn Manor SHS (Lancaster)
	Hollidaysburg SHS (Blair)	Frazier SHS (Fayette)
	Downingtown Joint SHS (Chester)	Lehighton SHS (Carbon)
	South Park JSHS (Allegheny)	Millville Area SHS (Columbia)
	Perkiomen Valley SHS (Montgomery)	
MEDIUM:		
	Unionville JSHS (Chester	Upper St. Clair SHS (Allegheny)
	Henderson SHS (Chester)	Central Bucks SHS (Bucks)
	Midland JSHS (Beaver)	Upper Merion SHS (Montgomery)
	Homestead SHS (Allegheny)	Mt. Lebanon SHS (Allegheny)
LARGE:		
	William Allen SHS (Lehigh)	Kensington SHS (Philadelphia)
	John Bartram SHS (Philadelphia)	Allegheny SHS (Allegheny)
	Perry JSHS (Allegheny)	

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APPENDIX B

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V. Percentile Norms on Clerical Aptitude Test Part E Score

VI. Percentile Norms on Clerical Aptitude Test Part F Score

VII. Percentile Norms on Stenographic Aptitude Test Part I Score

VIII. Percentile Norms on Stenographic Aptitude Test Part II Score

IX. Percentile Norms on Stenographic Aptitude Test Part III Score

X. Percentile Norms on Stenographic Aptitude Test Part IV Score

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XIX. Percentile Norms on Test of Practical Judgment Factual Score

XX. Percentile Norms on Test of Practical Judgment Social Score

XXI. Percentile Norms on Mental Alertness Test Score

TABLE I

Percentile Norms on Clerical Aptitude--Part A Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	78	83	95
90	72	78	90
80	67	72	80
75	65	69	75
70	63	68	70
60	60	65	60
50	56	62	50
40	53	57	40
30	50	53	30
25	48	51	25
20	45	49	20
10	38	44	10
5	31	36	5
Mean	56.07	60.54	
Standard Deviation	14.01	13.95	

TABLE II

Percentile Norms on Clerical Aptitude--Part B Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	52	55	95
90	49	53	90
80	46	49	80
75	45	48	75
70	44	47	70
60	42	45	60
50	40	43	50
40	38	42	40
30	36	39	30
25	35	38	25
20	33	36	20
10	29	32	10
5	26	28	5
Mean	39.86	42.85	
Standard Deviation	7.79	8.17	

TABLE III

Percentile Norms on Clerical Aptitude--Part C Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	55	59	95
90	51	55	90
80	46	50	80
75	45	48	75
70	43	47	70
60	40	44	60
50	37	41	50
40	34	37	40
30	31	35	30
25	30	33	25
20	27	31	20
10	23	26	10
5	21	23	5
Mean	37.46	40.79	
Standard Deviation	10.61	11.19	

TABLE IV

Percentile Norms on Clerical Aptitude--Part D Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	87	95	95
90	81	89	90
80	73	81	80
75	71	78	75
70	68	75	70
60	64	71	60
50	60	66	50
40	56	62	40
30	51	57	30
25	48	54	25
20	45	51	20
10	38	42	10
5	34	37	5
Mean	60.01	66.41	
Standard Deviation	16.48	18.02	

TABLE V

Percentile Norms on Clerical Aptitude--Part E Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	50	52	95
90	46	50	90
80	43	47	80
75	42	46	75
70	40	45	70
60	36	42	60
50	34	39	50
40	31	36	40
30	28	32	30
25	26	30	25
20	24	29	20
10	19	24	10
5	15	19	5
Mean	33.60	37.84	
Standard Deviation	10.60	10.34	

TABLE VI

Percentile Norms on Clerical Aptitude--Part F Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	70	75	95
90	64	70	90
80	57	63	80
75	54	59	75
70	52	56	70
60	47	51	60
50	42	46	50
40	37	40	40
30	32	35	30
25	29	32	25
20	27	29	20
10	20	23	10
5	16	18	5
Mean	42.36	46.07	
Standard Deviation	16.84	17.57	

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TABLE VII

Percentile Norms on ERC Stenographic Aptitude Test--Part I Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	81	80	95
90	73	73	90
80	65	68	80
75	63	66	75
70	60	64	70
60	58	61	60
50	54	59	50
40	52	55	40
30	50	53	30
25	49	51	25
20	48	50	20
10	44	46	10
5	42	43	5
Mean	57.20	59.57	
Standard Deviation	12.63	11.68	

TABLE VIII

Percentile Norms on ERC Stenographic Aptitude Test--Part II Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	45	45	95
90	43	44	90
80	41	42	80
75	40	41	75
70	39	40	70
60	37	38	60
50	35	36	50
40	34	35	40
30	32	33	30
25	31	32	25
20	30	31	20
10	27	28	10
5	25	26	5
Mean	35.64	36.51	
Standard Deviation	6.07	5.91	

TABLE IX

Percentile Norms on ERC Stenographic Aptitude Test--Part III Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	47	48	95
90	45	47	90
80	42	44	80
75	41	43	75
70	40	42	70
60	37	40	60
50	34	38	50
40	31	35	40
30	27	30	30
25	25	28	25
20	22	25	20
10	14	19	10
5	10	13	5
Mean	32.12	35.08	
Standard Deviation	11.46	11.04	

TABLE X

Percentile Norms on ERC Stenographic Aptitude Test--Part IV Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	36	37	95
90	33	33	90
80	28	29	80
75	26	27	75
70	24	25	70
60	22	23	60
50	20	21	50
40	18	19	40
30	16	17	30
25	15	16	25
20	14	15	20
10	12	13	10
5	10	11	5
Mean	21.49	22.30	
Standard Deviation	8.02	7.75	

TABLE XI

Percentile Norms on ERC Stenographic Aptitude Test--Part V Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	205	207	95
90	197	201	90
80	179	192	80
75	173	188	75
70	168	183	70
60	159	176	60
50	149	169	50
40	140	162	40
30	130	154	30
25	124	149	25
20	119	142	20
10	104	129	10
5	87	115	5
Mean	148.65	166.53	
Standard Deviation	34.36	27.50	

TABLE XII

Percentile Norms on ERC Stenographic Aptitude Test--Total Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	381	385	95
90	362	371	90
80	339	358	80
75	331	352	75
70	325	346	70
60	310	334	60
50	295	323	50
40	282	312	40
30	266	300	30
25	259	293	25
20	251	282	20
10	223	259	10
5	200	239	5
Mean	294.84	319.49	
Standard Deviation	53.50	44.01	

TABLE XIII

Percentile Norms on Press Test Scores* Based on SHARP Sample 1 (N=1132)

Percentile	Part I	Part II	Part III	Part I-Part II	Part II-Part III	Percentile
95	68	65	67	67	68	95
90	62	61	62	63	64	90
80	59	57	57	58	58	80
75	58	55	55	56	55	75
70	56	53	53	53	53	70
60	52	51	50	51	50	60
50	50	48	47	48	47	50
40	47	46	46	45	45	40
30	46	44	43	41	42	30
25	45	43	42	40	41	25
20	44	42	40	38	39	20
10	39	39	36	33	34	10
5	36	37	33	30	31	5
Mean	51.12	49.71	48.68	48.05	48.39	
Standard Deviation	9.54	9.29	10.29	11.43	11.39	

*Scores reported are converted scores based on transformation table presented in The Press Test: Test Administration Manual, Chicago: The University of Chicago Industrial Relations Center, 1967.

TABLE XIV

Percentile Norms on Primary Business Interests Test-Accounting Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	53	53	95
90	49	48	90
80	42	40	80
75	39	36	75
70	37	33	70
60	32	28	60
50	28	24	50
40	24	20	40
30	20	16	30
25	18	14	25
20	16	12	20
10	10	8	10
5	6	5	5
Mean	29.01	26.10	
Standard Deviation	14.48	14.79	

TABLE XV

Percentile Norms on Primary Business Interests Test-Collection and Adjustment Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	23	25	95
90	21	22	90
80	17	18	80
75	16	16	75
70	15	15	70
60	12	12	60
50	10	10	50
40	8	8	40
30	6	7	30
25	5	6	25
20	4	5	20
10	2	2	10
5	1	1	5
Mean	10.99	11.66	
Standard Deviation	7.17	7.29	

TABLE XVI

Percentile Norms on Primary Business Interests Test--Sales-Office Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	25	25	95
90	23	23	90
80	20	21	80
75	19	20	75
70	18	18	70
60	16	17	60
50	15	15	50
40	13	13	40
30	11	12	30
25	10	11	25
20	9	10	20
10	7	7	10
5	5	4	5
Mean	14.71	15.26	
Standard Deviation	6.53	6.43	

TABLE XVII

Percentile Norms on Primary Business Interests Test--Sales-Store Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	87	89	95
90	82	84	90
80	74	78	80
75	72	75	75
70	69	73	70
60	63	67	60
50	58	61	50
40	52	55	40
30	46	49	30
25	42	46	25
20	38	42	20
10	29	34	10
5	24	26	5
Mean	55.43	59.47	
Standard Deviation	22.56	20.99	

TABLE XVIII

Percentile Norms on Primary Business Interests Test--Records Management Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	33	34	95
90	31	32	90
80	29	29	80
75	28	28	75
70	27	27	70
60	25	25	60
50	23	23	50
40	21	21	40
30	18	19	30
25	17	18	25
20	16	17	20
10	12	13	10
5	9	10	5
Mean	22.29	22.99	
Standard Deviation	7.78	7.63	

TABLE XIX

Percentile Norms on Test of Practical Judgment--Factual Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	47	48	95
90	45	46	90
80	42	43	80
75	41	42	75
70	40	41	70
60	38	39	60
50	37	38	50
40	36	37	40
30	34	35	30
25	33	34	25
20	32	33	20
10	30	31	10
5	28	29	5
Mean	37.47	38.67	
Standard Deviation	5.73	5.72	

TABLE XX

Percentile Norms on Test of Practical Judgment--Social Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	48	48	95
90	46	46	90
80	44	44	80
75	43	43	75
70	42	42	70
60	41	41	60
50	39	40	50
40	38	38	40
30	36	37	30
25	35	36	25
20	33	35	20
10	28	31	10
5	23	27	5
Mean	38.29	39.32	
Standard Deviation	7.81	6.39	

TABLE XXI

Percentile Norms on Mental Alertness Test Scores Based on SHARP Sample 1 (N=1132) and SHARP Sample 2 (N=958)

Percentile	Sample 1	Sample 2	Percentile
95	42	43	95
90	38	39	90
80	34	35	80
75	32	33	75
70	31	32	70
60	28	30	60
50	26	28	50
40	23	25	40
30	20	22	30
25	19	20	25
20	17	19	20
10	13	14	10
5	9	11	5
Mean	25.74	27.26	
Standard Deviation	9.83	9.87	

APPENDIX C

(The number at the left of the alternative in each item represents the total per cent of response to that part. The numbers at the right represent the response percentage of Sample 1 and Sample 2.)

STUDENT QUESTIONNAIRE

Please note: These questions have been constructed primarily to provide a sampling of your opinion concerning a variety of topics. There are no "right" or "wrong" answers. Mark the answer sheet only once for each item. Give an honest evaluation of what you believe represents your view on each question.

TOTAL %		SAM. 1	SAM. 2
1. In what school year did you have your first year of shorthand?			
54.42a.	1970-71	54.42	- - -
45.58b.	1969-70	- - -	45.58
2. Do you plan to enroll, or are you presently enrolled, in a second year of shorthand?			
69.81a.	yes	73.35	65.59
30.19b.	no (If this is your answer, after entering it on the answer sheet, turn the answer sheet over, write #2, and explain why not.)	26.65	34.41
3. Do you plan to finish high school?			
98.90a.	yes	99.16	98.59
1.10b.	no (If this is your answer, after entering it on the answer sheet, turn the answer sheet over, write #3, and explain why not.)	.84	1.41
4. Was the decision to enroll in shorthand yours?			
87.70a.	yes	88.67	86.30
2.75b.	no, I was influenced primarily by the guidance counselor	2.36	3.22
6.33c.	no, I was influenced primarily by my parent(s)	5.90	6.85
1.74d.	no, I was influenced primarily by a friend	1.60	1.91
1.47e.	no, influence was from another source (If you choose this answer, after marking it, turn the answer sheet over, write #4 and explain what the influence was briefly.)	1.26	1.47
5. Did a guidance counselor encourage you to take shorthand?			
17.19a.	yes	15.64	19.05
82.81b.	no	84.36	80.95
6. How much time did you spend discussing course selection with a guidance counselor during the school year in which you decided to enroll in shorthand?			
46.56a.	none	46.89	46.17
37.52b.	less than one half hour	36.78	38.41
11.74c.	one half hour to less than one hour	11.70	11.79
2.98d.	one to less than two hours	3.62	2.22
1.19e.	two hours or more	1.01	1.41

TOTAL %		SAM. 1	SAM. 2
7. What do you plan to do after completing high school?			
41.49	a. get a full-time position	37.60	46.12
18.49	b. go to business school	22.78	13.39
11.91	c. go to college	13.12	10.47
16.93	d. get a job and take further schooling	15.83	18.23
11.18	e. other plans (If you select this answer, please explain on back of answer sheet.)	10.67	11.18
8. In terms of importance to your future, how do you rate shorthand?			
6.38	a. not important at all	3.29	10.09
13.13	b. little importance	10.61	16.15
32.60	c. the same as other courses	37.66	26.54
40.96	d. more important than most other courses	42.26	39.15
6.93	e. the most important course	5.98	8.07
9. Do you think you will be working in an office ten years from now?			
7.02	a. definitely not	5.81	8.46
18.66	b. unlikely	14.48	23.67
41.59	c. have no idea	43.77	38.97
23.66	d. likely	25.25	21.75
9.08	e. almost certainly	10.69	7.15
10. (For the girls only) Fifteen years from now, do you think you will be:			
34.28	a. a homemaker	32.85	36.00
57.03	b. married and working	58.06	55.79
8.69	c. an unmarried career girl	9.09	8.21
11. (For the fellows only) Do you plan to enter a career in which you will use shorthand?			
51.40	a. no	49.23	54.76
48.60	b. yes	50.77	45.24
12. How do (did) your parents feel about your studying shorthand?			
1.47	a. they actively discouraged it	1.44	1.51
2.58	b. somewhat discouraging	3.05	2.02
24.37	c. they didn't care, one way or the other	23.39	25.53
38.74	d. somewhat encouraging	39.24	38.14
32.84	e. very encouraging	32.88	32.84
13. Are you:			
5.00	a. an only child	4.77	5.27
28.83	b. the oldest child	27.83	30.02
42.39	c. an in-between child	44.26	40.16
23.79	d. the youngest child	23.15	24.54

TOTAL %		SAM. 1	SAM. 2
14. How many brothers and sisters do you have?			
5.36	a. none	5.39	5.34
42.82	b. 1 or 2	40.24	45.92
29.89	c. 3 or 4	29.80	30.01
13.80	d. 5 or 6	15.32	11.98
8.12	e. more than 6	9.26	6.75
15. How important is it to your parents that you get good grades?			
1.12	a. not important at all	1.11	1.12
2.98	b. relatively unimportant	2.83	3.16
33.81	c. fairly important	32.82	35.00
62.09	d. very important	63.24	60.71
16. Has your mother ever worked in an office?			
62.47	a. no	59.39	66.13
8.84	b. don't know	10.49	6.88
28.69	c. yes	30.12	27.00
17. Not counting required reading (textbooks, etc.) about how many books have you read during the past year?			
4.49	a. none	4.72	4.23
14.53	b. 1 to 2 books	14.15	14.99
32.28	c. 3 to 5 books	32.35	32.19
22.97	d. 6 to 10 books	21.65	24.55
25.72	e. 11 or more books	27.13	24.04
18. In how many organized extracurricular activities are you participating?			
32.54	a. none	34.29	30.44
21.57	b. 1	22.24	20.77
18.95	c. 2	18.37	19.66
14.55	d. 3	13.65	15.63
12.39	e. 4 or more	11.46	13.51
19. Which type of puzzle would you prefer?			
40.24	a. crossword	39.74	40.84
6.94	b. intertwined rings	6.70	7.23
38.61	c. jigsaw	38.45	38.80
14.21	d. none	15.11	13.14
20. Which of the following things would you best be able to do?			
38.80	a. Do homework watching T. V.	38.28	39.42
6.47	b. Do a crossword puzzle while talking on the phone.	6.75	6.15
4.96	c. Hear a lecture while writing a letter.	5.48	4.33
8.68	d. Eat lunch while driving a car.	7.59	9.98
41.09	e. None of the above things well.	41.91	40.12

TOTAL %		SAM. 1	SAM. 2
21. Have you ever noticed any hearing difficulties?			
82.70	a. no	83.25	82.04
17.30	b. yes	16.75	17.96
22. Which one of the following is the sound of a cat most like?			
5.56	a. policeman's whistle	5.97	5.07
15.66	b. flute	14.85	16.63
5.00	c. cow	4.95	5.07
48.38	d. chalk screeching	49.49	47.06
25.39	e. pigeon's "coo"	24.74	26.17
23. In your home or community, did you learn to speak more than one language?			
76.27	a. no	72.29	81.01
23.73	b. yes	27.71	18.99
24. Have you ever studied a foreign language?			
38.51	a. no	37.66	39.54
6.14	b. yes, for one half year	5.81	6.54
21.55	c. yes, for one year	19.88	23.54
18.43	d. yes, for one and one half or two years	18.87	17.91
15.36	e. yes, for more than two years	17.78	12.47
25. Of the subjects listed, which do you enjoy the most?			
28.94	a. art	28.84	29.06
10.46	b. sciences	10.86	9.99
6.45	c. foreign language	6.96	5.85
26.87	d. English	25.28	28.76
27.28	e. mathematics	28.07	26.34
26. Of the subjects listed, which do you enjoy the least?			
7.76	a. art	8.68	6.66
33.44	b. sciences	35.24	31.28
14.33	c. foreign language	14.67	19.93
14.75	d. English	15.50	15.04
29.72	e. mathematics	26.90	33.10
27. When you study mathematics, do you tend to:			
27.26	a. memorize the process	25.61	29.24
72.74	b. understand the method	74.39	70.76
28. In school, would you prefer to have primarily:			
73.77	a. class work, class assignments, tests, etc.	73.34	74.29
26.23	b. independent reading, term papers, etc.	26.66	25.71

TOTAL %		SAM. 1	SAM. 2
29. What work pace do you prefer:			
24.84	a. work at a slow pace	26.14	23.28
18.39	b. work faster than the class	15.91	21.36
5.94	c. work hard, then do nothing, then work hard . . .	5.25	6.78
1.66	d. work hard only at the end of the course	2.12	1.11
49.17	e. work hard at the beginning and average for the rest of the course	50.59	47.47
30. In comparison with most of your classmates, how much do you study during the school year?			
4.00	a. much less than most	3.80	4.23
9.92	b. slightly less than most	9.64	10.26
64.86	c. about the same	65.26	64.39
18.05	d. slightly more than most	17.75	18.41
3.17	e. much more than most	3.55	2.72
31. How easy do you think shorthand is to learn?			
7.02	a. very difficult	7.17	6.84
21.24	b. difficult	23.86	18.11
44.40	c. about average	49.92	37.83
20.37	d. easy	15.77	25.86
6.97	e. very easy	3.29	11.37
32. How much do you like to type?			
1.74	a. not at all	1.69	1.81
4.31	b. a little	4.38	4.23
24.17	c. it's all right	23.69	24.75
34.08	d. it's enjoyable	34.99	33.00
35.69	e. very much	35.24	36.22
33. What is your estimate of your academic average last year? (Your major subjects)			
1.39	a. very low	1.10	1.73
9.98	b. D	10.83	8.96
47.83	c. C	48.98	46.44
34.70	d. B	33.33	36.35
6.10	e. A	5.75	6.52
34. What grade do you expect to get in shorthand at the end of this school year?			
13.34	a. A	9.50	19.26
43.51	b. B	43.15	44.06
33.18	c. C	36.99	27.31
7.32	d. D	8.22	5.94
2.65	e. E	2.14	3.43
35. How satisfied are you with the way your high school education to this point has prepared you for the future?			
4.51	a. very dissatisfied	4.47	4.56
12.89	b. somewhat dissatisfied	12.31	13.58
27.24	c. neutral	29.34	24.72
42.48	d. fairly satisfied	41.06	44.17
12.89	e. very satisfied	12.82	12.97

TOTAL %		SAM. 1	SAM. 2
36. What type of classroom arrangement do you prefer?			
11.67	a. large, with straight rows	12.26	10.98
12.04	b. large, with desks in work groupings	13.19	10.67
20.13	c. small, in circle or semi-circle	19.61	20.75
32.90	d. small, in straight rows	31.95	34.04
23.25	e. small, with desks in work groupings	22.99	23.56
37. On the average, how often are you late for school, or late for the school bus if that is the way you come to school?			
3.54	a. once a week or more	3.89	3.12
7.67	b. 1 to 3 times a month	8.70	6.45
7.81	c. 1 to 3 times in one half school year	7.69	7.96
36.33	d. 1 to 3 times in one school year	35.90	36.86
44.65	e. never	43.83	45.62
38. Which hand do you use most easily?			
10.17	a. left	9.69	10.74
89.83	b. right	90.31	89.26
39. Ordinarily, do you do shorthand homework promptly and thoroughly:			
2.53	a. very seldom	1.45	3.92
3.68	b. seldom	3.23	4.24
16.42	c. sometimes yes, sometimes no	16.24	16.65
48.02	d. usually	48.38	47.55
29.36	e. always	30.70	27.64
40. Do you get assistance with shorthand homework outside of class?			
69.03	a. no	64.60	74.70
14.20	b. yes, from a friend	14.52	13.79
14.39	c. yes, from a sister, brother, or parent	18.51	9.12
2.10	d. yes, from a teacher	2.04	2.17
.29	e. yes, from a tutor	.34	.22
41. In the class in which you had your first year of shorthand, how many students were there?			
2.03	a. less than 10	.94	3.33
7.67	b. 10 to 15	5.88	9.80
43.60	c. 16 to 25	42.71	44.65
41.10	d. 26 to 35	41.86	40.20
5.59	e. over 35	8.61	2.02
42. What do you feel would profit you most in learning shorthand?			
12.92	a. once-a-week practice time with friends	15.56	9.74
34.59	b. working by yourself with tape recorded practice material	25.09	46.05
14.97	c. frequent tests	17.52	11.90
19.80	d. learning by yourself from the book	27.64	10.36
17.71	e. after learning basics, being put on a job	14.20	21.95

TOTAL %		SAM. 1	SAM. 2
43. How many friends do (or did) you have in the first year of shorthand?			
2.03	a. none	2.64	1.31
1.80	b. 1	2.47	1.01
10.31	c. 2 or 3	12.18	8.09
11.74	d. 4 or 5	12.95	10.31
74.11	e. more than 5	69.76	79.27
44. Which one of the opportunities listed below would be most important to you in any job you might consider? The opportunity to:			
28.20	a. use my special talents and abilities	26.32	30.44
24.70	b. work with people rather than things	25.47	23.79
29.86	c. be helpful to others and/or useful to society	30.73	28.83
8.62	d. avoid work which involves relatively high pressure	8.66	8.57
8.62	e. have relative freedom from supervision by others	8.83	8.37
45. Which one of the opportunities listed would you rank second in importance? The opportunity to:			
20.58	a. use my special talents and abilities	20.85	20.26
24.27	b. work with people rather than things	25.45	22.88
27.55	c. be helpful to others and/or useful to society	26.55	28.73
14.67	d. avoid work with relatively high pressures involved	13.96	15.52
12.92	e. have relative freedom from supervision by others	13.19	12.60
46. Which one of the alternatives listed would you rank lowest in importance? The opportunity to:			
9.69	a. use my special talents and abilities	10.70	8.49
9.78	b. work with people rather than things	10.62	8.80
3.62	c. be helpful to others and/or useful to society	3.94	3.24
39.13	d. avoid work which involves relatively high pressure	38.10	40.34
37.78	e. have relative freedom from supervision by others	36.64	39.13
47. If you wanted a full-time job, would you look:			
28.62	a. within 10 miles of your home area	27.79	29.60
20.27	b. in a large city near home	18.27	22.63
7.14	c. in a large city away from home	6.95	7.37
4.55	d. in a small community away from home	4.97	4.04
39.42	e. location is not important	42.02	36.36
48. How important is salary to you in choosing a job?			
2.27	a. unimportant, compared to other things	2.66	1.82
12.24	b. relatively unimportant, but must be considered	11.15	13.52
21.00	c. about the same as other factors	21.01	20.99
43.90	d. relatively important	43.40	44.50
20.58	e. very important	21.78	19.17

TOTAL %		SAM. 1	SAM. 2
49. Have you ever held a part-time office job?			
84.25	a. no	87.89	80.00
9.88	b. yes, for less than 6 months	7.79	12.32
3.54	c. yes, for 6 months to one year	2.34	4.95
1.26	d. yes, for 1 to 2 years	1.04	1.52
1.07	e. yes, for more than 2 years	.95	1.21
50. Do (or did) you have a part-time office job during the time you studied first-year shorthand?			
93.23	a. no	95.83	90.22
2.99	b. yes, 1 to 6 hours per week	2.09	4.03
1.21	c. yes, 7 to 12 hours per week	.78	1.71
.98	d. yes, 13 to 18 hours per week	.52	1.51
1.59	e. yes, more than 18 hours per week	.78	2.52
51. In comparing the duties and responsibilities of an office clerk and a stenographer, would you say there is:			
24.18	a. great difference	20.40	28.62
63.10	b. some difference	64.95	60.92
12.72	c. about the same or no difference	14.65	10.46
52. In comparing the jobs of a stenographer and a secretary, is there:			
16.82	a. great difference	15.83	17.97
68.74	b. some difference	69.74	67.56
14.45	c. no difference	14.42	14.48
53. If you were working in a stenographic job, would you prefer:			
31.04	a. being in a stenographic pool with shared responsibilities	30.11	32.13
57.20	b. being in a large company, but working for only one person	57.33	57.05
11.75	c. being the only one responsible for the stenographic work in a small company.	12.55	10.81
54. How good is your short-term memory? (Example: remembering a series of seven numbers for one minute)			
1.78	a. very poor	1.30	2.34
5.76	b. rather poor	5.30	6.31
55.30	c. probably about average	57.34	52.90
29.71	d. good	29.02	30.52
7.45	e. very good	7.04	7.93
55. How well do you like learning new words?			
3.15	a. not at all	3.84	2.34
17.75	b. not much	17.89	17.58
33.52	c. indifferent to it	31.85	35.47
37.28	d. enjoy it	37.70	36.79
8.31	e. like very much	8.73	7.83

STUDENT QUESTIONNAIRE

Part II

Please answer the following questions if your first year of shorthand instruction was during the 1969-70 school year.

	SAM. 2 ONLY
56. How much at ease did you feel in your first year of shorthand?	
a. always tense	10.81
b. usually uncomfortable	16.99
c. similar to the way I feel when under moderate pressure	28.73
d. somewhat relaxed	31.62
e. very much at ease	11.84
57. How much of the time did you enjoy shorthand during the first year?	
a. rarely	12.78
b. less than half of the time	11.65
c. about half of the time	22.99
d. more than half of the time	16.60
e. most of the time	35.98
58. What part of learning shorthand did you enjoy most?	
a. memorizing brief forms and new strokes	16.48
b. reading shorthand	46.53
c. taking dictation	22.80
d. transcribing shorthand notes	11.40
e. other (If you select this, after you mark the answer sheet turn it over, write #58 on the back, and state what you liked most.)	2.80
59. What part of learning shorthand did you enjoy least?	
a. memorizing brief forms and new strokes	26.77
b. reading shorthand	10.42
c. taking dictation	38.23
d. transcribing shorthand notes	19.79
e. other (If you select this, after you mark the answer sheet turn it over, write #59 on the back, and state what you liked least.)	4.79
60. Would you say that the grade you received after one year of studying shorthand:	
a. greatly underrated your ability	4.69
b. slightly underrated your ability	11.56
c. fairly represented your ability	69.79
d. slightly overrated your ability	10.42
e. greatly overrated your ability	3.54

SAM. 2 ONLY

61. To what extent do you feel that your shorthand teacher was interested in your success in your first year of studying shorthand?

a. not at all	4.98
b. not much	7.58
c. average	17.96
d. somewhat	20.46
e. very much	49.01

62. When you took the beginning course in shorthand, about how many hours each week did you practice outside of class, including time spent on homework?

a. less than 1 hour	8.20
b. 1 to 2 hours	25.65
c. 3 to 5 hours	35.62
d. 6 to 10 hours	24.82
e. more than 10 hours	5.71

63. During the last three months of your first year of shorthand, what per cent of total class time did you spend transcribing from shorthand symbols to English?

a. 50% or more	26.50
b. 25% to 50%	38.23
c. 10% to 24%	22.39
d. 1% to 9%	8.34
e. none	4.54

64. What per cent of that transcription was done on the typewriter? (If you did not transcribe at all, omit this question.)

a. 100%	11.53
b. 70% to 99%	11.53
c. 30% to 69%	15.92
d. less than 30%	30.33
e. none	30.68

65. In what range was your typewriting speed by the end of the first year of shorthand?

a. less than 25 words a minute	5.20
b. 26 to 35 words a minute	15.60
c. 36 to 45 words a minute	30.55
d. 46 to 55 words a minute	28.71
e. over 55 words a minute	19.93

- END -

97/98

APPENDIX D

98/99

LIST OF TABLES

I. Summary of Predictor and Criteria Measures Used in SHARP Data Presentations

II. Summery of Step-Wise Regression Analysis--Criterion Shorthand I Final Grade

III. Summary of Step-Wise Regression Analysis--Criterion Shorthand I Final Grade Dichotomy (Pass/Fail)

TABLE I

Summary of Predictor and Criteria Measures and Abbreviations
Used in Project SHARP Data Presentations

Clerical Aptitude (CA)

Part A: Numerical perception
Part B: Verbal perception
Part C: Numerical reasoning I
Part D: Filing speed and accuracy
Part E: Verbal reasoning
Part F: Numerical reasoning II

Stenographic Aptitude (ERC)

Part I: Speed of writing
Part II: Word discrimination
Part III: Phonetic spelling
Part IV: Vocabulary
Part V: Dictation (longhand)
T: Total

Press Test (PR)

Part 1: Reading speed
Part 2: Color-naming speed
Part 3: Color-naming speed with distraction
Part 1-Part 2: Difference between reading speed and color-naming speed
Part 2-Part 3: Difference between color-naming speed with and without distraction

Primary Business Interests Test (PBIT)

Part 1: Accounting
Part 2: Collection-Adjustments
Part 3: Sales-Office
Part 4: Sales-Store
Part 5: Records Management

Practical Judgment (PJ)

FJ: Factual
SJ: Social

Mental Alertness (MA)

School Size (SIZE)

Shorthand I Final Grade (SH1 FGR)

Shorthand II Enrolled/Not Enrolled Status (SH2 Status)

Shorthand II Final Grade (SH2 FGR)

Questionnaire Scale 1 (Ques. 1)

Questionnaire Scale 2 (Ques. 2)

TABLE II

Summary of Step-Wise Regression Analysis of Potential Predictor Variables--
Criterion: Shorthand I Final Grade--SHARP Sample 1 (N=1002)

Step Number	Variable	Cumulative R
1	ERC-III	.4406
2	Ques. 1	.5070
3	MA	.5270
4	SIZE	.5354
5	CA-B	.5430
6	ERC-I	.5478
7	PR 1-2	.5511
8	ERC-II	.5540
9	CA-E	.5573
10	PBIT-1	.5602
11	PBIT-3	.5630
12	FJ	.5647
13	PBIT-5	.5662
14	PR-3	.5671
15	CA-C	.5677
16	CA-F	.5682
17	PBIT-2	.5686
18	ERC-T	.5689
19	SJ	.5690
20	PBIT-4	.5692
21	ERC-IV	.5692
22	ERC-V	.5696
23	CA-A	.5697

Variables Remaining

CA-D
PR-1
PR-2
PR 2-3

TABLE III

Summary of Step-Wise Regression Analysis of Potential Predictor Variables--
Criterion: Shorthand I Final Grade Dichotomy (Pass/Fail)--
SHARP Sample 1 (N=1002)

Step Number	Variable	Cumulative R
1	ERC-III	.2410
2	CA-C	.2722
3	Ques. 1	.2916
4	SIZE	.3057
5	ERC-II	.3087
6	PBIT-5	.3108
7	MA	.3126
8	PBIT-3	.3149
9	SJ	.3160
10	PBIT-1	.3171
11	ERC-V	.3180
12	CA-F	.3191
13	ERC-IV	.3198
14	PBIT-4	.3205
15	FJ	.3210
16	CA-A	.3213
17	PR-2	.3218
18	CA-E	.3222

Variables Remaining

CA-B
CA-D
ERC-I
ERC-T
PBIT-2
PR-1
PR-3
PR 1-2
PR 2-3

VT 019 116

VT 019 116
ORTHOPAEDIC MANPOWER STUDY, 1971. PHASE I.

AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS, CHICAGO, ILL.; AMERICAN MEDICAL ASSOCIATION, CHICAGO, ILL. COUNCIL ON HEALTH MANPOWER.; WASHINGTON UNIV., SEATTLE.
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, WASHINGTON, D.C. DIV. OF PHYSICIAN MANPOWER.
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IDENTIFIERS - *ORTHOPAEDIC SURGEONS

ABSTRACT - THIS REPORT IS A SUMMARIZATION OF THE FIRST PHASE OF A 3-PART STUDY TO DETERMINE THE MANNER IN WHICH ORTHOPAEDISTS PRACTICE UNDER VARIOUS CONDITIONS IN DIFFERENT REGIONS OF THE WORLD IN ORDER TO GET A CLEAR PICTURE OF THE ATTITUDES AND PRACTICES REGARDING THE USE OF ALLIED HEALTH PROFESSIONALS. DATA WERE OBTAINED FROM QUESTIONNAIRES DISTRIBUTED TO A POPULATION OF 2,400 ORTHOPAEDISTS SELECTED AT RANDOM. A TOTAL OF 1,557 QUESTIONNAIRES WERE RETURNED. FINDINGS INCLUDE: (1) ACCORDING TO RECORDS THERE WERE AS MANY AS 8,426 PRACTICING ORTHOPAEDISTS IN 1967, OF WHICH 4,792 WERE CERTIFIED BY THE AMERICAN BOARD OF ORTHOPAEDIC SURGEONS, (2) THERE SEEM TO EXIST VAST DEMOGRAPHIC VARIABLES AMONG ORTHOPAEDISTS, (3) A TOTAL OF 28 TASKS IN ORTHOPAEDIC PRACTICE WERE IDENTIFIED IN THIS INVESTIGATION, (4) THE PERCEPTION OF A NEED FOR ADDITIONAL ORTHOPAEDISTS DOES NOT SEEM TO VARY PARTICULARLY, BY AGE OR BY POPULATION IN WHICH THE ORTHOPAEDIST PRACTICES, AND (5) THERE SEEMS TO BE STRONG CORRELATION BETWEEN THE NUMBER OF ORTHOPAEDISTS, WHEN SINGLE COUNTIES ARE EXAMINED. (AUTHOR/SN)

PHASE I

ORTHOPAEDIC MANPOWER STUDY 1971

American Academy of Orthopaedic Surgeons
and
Council on Health Manpower
of
The American Medical Association

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FOREWORD

ORTHOPAEDIC MANPOWER STUDY

Contents of this document are a compilation of data provided by questionnaires completed by 1,557 of 2,396 orthopaedic surgeons selected at random, or approximately 30% of the active membership of the Academy. The purpose of the survey was to determine, in as much detail as possible, the manner in which orthopaedists practice under various conditions in different regions of the country—a preliminary task analysis. Material has been organized in a clear presentation for the reader. Many questions arise, some are answered. This portion of the study has been designated as Phase I.

Phase II, presently underway, is a more detailed task analysis of orthopaedic practice in 11 western states. The extension of this method to the nation as a whole is projected as Phase III, while the expansion of the study to include an in-depth survey as to how the need for care of the musculo-skeletal system is actually met by various delivery systems in a circumscribed geographic area is planned as Phase IV.

The Committee for the Study of Manpower Requirements in Orthopaedic Surgery is extremely grateful to those orthopaedic surgeons who have taken the time to respond to a difficult request and to those who will aid in continuation of the study. In addition, the study would not be possible without the cooperative efforts of the Council on Health Manpower of the American Medical Association and its Staff, along with the University of Washington and its Staff, particularly Ralph Requa, Project Director. Funds for the study were provided to the University of Washington by the Division of Physician Manpower, Department of HEW, to underwrite the project.

The Executive Committee believes the information collected by the Committee for the Study of Manpower Requirements in Orthopaedic Surgery is important to the orthopaedic surgeon and others

who must plan approaches to beneficial changes for the physician and his patients. It is being distributed without charge to each member of the Academy and to others on request to the Academy Office.

COMMITTEE FOR THE STUDY OF MANPOWER REQUIREMENTS IN ORTHOPAEDIC SURGERY

2

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Orthopaedic Manpower Study
Questionnaire Survey

I. INTRODUCTION AND METHODOLOGY

What is the need for orthopaedic surgeons in the United States today? What will be the future requirements? How might this number be affected by alterations in the type or setting of practice? What increase (decrease) in efficiencies might be achieved by the use of appropriate allied health professionals?

In an effort to rectify the lack of sound empirical data concerning many aspects of the practice of orthopaedic surgery, the ad hoc Committee for the Study of Manpower Requirements in Orthopaedic Surgery* in cooperation with the Council on Health Manpower of the American Medical Association designed a questionnaire form that was mailed to a fifty percent sample of the membership of the American Academy of Orthopaedic Surgeons. The purpose of the study was to survey in as much detail as possible the manner in which Academy orthopaedists practice in different regions of the country and in different practice settings, to obtain information as to attitudes and practices regarding the use of allied health professionals,[1] and to determine, if possible, what conditions orthopaedists treat. A copy of the questionnaire is reproduced in Appendix I; its size testifies to the patience of the orthopaedists who completed their forms.

Out of approximately 2,400 orthopaedists selected at random from

* Now the Committee for the Study of Manpower Requirements in Orthopaedic Surgery.

[1] For this report A.H.P. refers to those categories of health professionals excluding doctors of medicine, osteopathy and dentistry.

the membership list of the American Academy of Orthopaedic Surgeons, 1,557 (67%) returned usable questionnaires. This is an outstanding recovery considering the length and complexity of the questionnaire. In addition a number of respondents (77) were disqualified on the basis that they were not proper members of the sample (deceased, retired or practicing abroad). In order that analysis of the collected data might begin, an arbitrary cut-off point was selected after
4 which the responses were collected but not entered into the data set (50).

In order to check the validity of the returned responses, a random sample of the nonrespondents was drawn and these individuals interviewed by telephone. The information collected on a number of variables was compared to that of the respondents in the mailed questionnaires. The responses of the 40 called and those of the full sample were so remarkably similar that it can be concluded that the apparent lack of bias of the nonrespondents would validate the sample as being representative of the entire American Academy of Orthopaedic Surgeons membership. An example comparing the distribution of types of practice in the telephone sample with that of the full sample can be seen in Table 1. Other demographic variables showed essentially the same pattern.

The reasons that were given for nonresponse tend to support the conclusion that there was no difference between the respondents and the nonrespondents in that no one indicated that they had *decided* not to return the form. On the contrary most said they had meant to send it in but for one reason or another had not gotten around to it. The remarkable degree of cooperation obtained from the Academy members substantiates their interest in seeking answers to the questions raised.

II. RESULTS AND DISCUSSION

A. Number of Orthopaedists

The American Medical Association census questionnaire of 1967 indicates there were 8,426 individuals who practiced the specialty of orthopaedics. Of these, approximately 4,792* are certified by the American Board of Orthopaedic Surgeons. Inasmuch as most individuals certified eventually obtain Academy membership, these figures are utilized as representing the sampled group. No information has been obtained about the significant group of physicians not belonging to the Academy practicing orthopaedics. Because of increasing pressures from hospitals and mounting malpractice claims, it is expected that the noncertified group will represent an increasingly diminishing percentage of the total orthopaedist population. 5

Table 2 is a composite table of the numbers of orthopaedic surgeons certified annually and the population of the United States in millions. The estimated increase in population to 1980 is the average of the variable estimates given by the Bureau of the Census. The projections of orthopaedists certified are extensions based on the slope of the curve from 1940 to 1970 (dashed line) and from 1960 through 1970 (dotted line) projected through the 1971 figures. As of 1970 there were 2,154 residency positions currently offered in 228 programs. While the length of a residency program is usually four years, efforts to decrease the time spent in residency plus not reporting as orthopaedic residents those individuals taking their first year in general surgery would mean that the annual output of residents would be somewhat higher than one fourth of the figure of those in training.

B. Demographic Variables

The variables considered here as demographic are: age, type of

* Active Fellows, *Directory of the American Academy of Orthopaedic Surgeons*, April 1971. A number of these are not presently practicing in the United States (retired, deceased, overseas).

** *Directory of Approved Internships and Residencies* 1969–1970, Pp. 200.

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practice, population of the county of practice (county size) and region of country (region). Whenever percentages are indicated they have been rounded out to the closest whole percent. These variables will be used in the study as independent (and occasionally as causal) variables.

1. **Age.** The age distribution in percents can be seen in Table 3. The 5% indicated in the 35 year and under category is indicative that
6 few men are able to complete their education, obtain certification and entrance into the Academy prior to that age. While it appears that the number of orthopaedists joining the Academy seems to be on the increase (the average age now being 47 years), without specific information on attrition rates, estimates of what changes have and will take place in the age distribution cannot be made. However, the information on certification from Table 2 supports the conclusion as it clearly shows that the number of orthopaedists certified annually is increasing rather dramatically.

2. **Type of Practice.** Orthopaedists practice in a variety of settings. Table 4 shows the percentages of orthopaedists selecting the alternatives presented. The "other" category consists principally of combinations of settings rather than any other variety of orthopaedic practice. Most orthopaedists are in solo and small partnership group practices (68%)

3. **County Population.** Not surprising is the tendency for orthopaedists to practice in larger counties (Table 5). Forty-six percent practice in counties with populations in excess of 500,000 while 83% practice in counties greater than 100,000. Table 5 suggests that the distribution of orthopaedists is similar to that of doctors in general and that patients in rural, less populated counties have less access to orthopaedists without traveling significant distances. It is recognized, however, that the population of the county in which the orthopaedist practices does not necessarily represent the entire population those orthopaedists serve. It does represent the best hard data figures available and is the smallest unit of population that can be effectively sampled.

4. **Region.** The regional distribution of orthopaedists is shown in Table 6. A listing of states in each region is given in Appendix II. Comparing the percentage of orthopaedists with population in each region demonstrates that the ratio of orthopaedists to population

does vary. The Southwest (90% California) has one fifth of the orthopaedists yet one tenth of the population.

5. **Age and Type of Practice.** Practicing in solo and small groups (orthopaedic group <4) appears to be strongly related to age (Table 8). The remaining types of practice are evenly distributed throughout age groups. If one makes the assumption that this data represents predominately a changing rate of initial selection rather than a movement between types of practices over time, it can be concluded that these small partnerships have been steadily gaining favor almost entirely at the expense of solo practice. In interpreting this data, it must be remembered that in the characterization of the type of practice it was left to the individual to select between the alternatives given. 7

The increase in the category "other" in the 66+ group does agree with the observations that older men shift patterns of practice somewhat toward less demanding positions. Many of the "other" practice settings actually are "part-time" activities involving various combinations of practice that in effect constitute semiretirement for the individual.

6. **Age and Population of County of Practice.** The age of the orthopaedist does not seem to have much to do with the population of the county where he practices except that the oldest group (66+) is somewhat more urban than the average (65% in counties greater than 500,000 as opposed to an average of 46%). This is not surprising for at the time this group of individuals began practicing, specialty practice was conducted primarily in urban areas where most of the 500,000+ counties are now located.

7. **Age and Region of the Country.** The age distribution by region is farily evenly divided (Table 9).

8. **Type of Practice and Region of the Country.** There is only slight variation in the types of practice orthopaedists enter into throughout the different regions of the country. The exception to this is in the Northeast region where 43% of the orthopaedists are in solo practice compared to 26% to 31% for the other regions. Conversely, the Northeast has only 8% in orthopaedic groups greater than four compared to 16% to 23% in other regions.

9. **Type of Practice and County Size.** County size does not seem to have appreciable bearing on the type of practice except as might be anticipated in that orthopaedists in small multispecialty groups

($\leq$20) occur more frequently in smaller counties (7% vs. 3%) and large orthopaedic groups ($\geq$4) are more common in large counties (9% vs. 18%).

10. **Region and Population of County of Practice.** It has been established that orthopaedists tend to practice in the more urbanized areas. Table 10 shows the percentage that orthopaedists from different sized counties make up of the total from that region. The differences are
8 largely a function of the variation in the relative urbanization of various regions. The Southwest represents largely California which has 90% of the region's orthopaedists, and the large percentage of orthopaedists from counties greater than 500,000 is primarily Los Angeles County.

C. Allied Health Personnel (AHP)

An important part of the manpower investigation in orthopaedics concerns allied health personnel (AHP). In this section we will consider several aspects of their use in orthopaedic surgery.

1. **Twenty-eight Tasks in Orthopaedic Practice.** Twenty-eight tasks in orthopaedic practice were listed in the questionnaire protocol and the orthopaedist was asked two questions concerning these tasks. First, who generally performs the task in his practice,* and second, does he feel that an allied health worker with appropriate training and directly responsible to him: a) could and should, b) could but should not, or c) could not perform the tasks (Appendix I, Question 13). The tasks ranked in order of approval for performance by AHP ("could and should" perform the task) and the percentages of approval are listed in Table 11. The question eliciting these responses did *not* ask the orthopaedist to disregard obstacles that currently limit the use of AHP. If the question had requested that the orthopaedist disregard existing problems (liability, etc.), undoubtedly the number of "could and should" response would have been higher. Hence, these estimates of approval are conservative.

A valid measurement of the extent to which a definite need now exists for AHP in orthopaedic practice must include the degree to which orthopaedists feel that a particular task should be performed by AHP *and* the extent to which the tasks are actually performed by AHP at the present time. Taking the percentage of approval (percent "could and should") for a particular task and subtracting the per-

* Appendix I, Question 12.

centage who actually *use* an allied health worker to perform the task yields an estimate of the degree to which a need exists for AHP (potential need).

The percentages thus obtained for the "potential need" that exists for a task in orthopaedic practice represent those that *approve* of the use of AHP for the task yet *do not use* this personnel to perform the task in their practice.

It is immediately recognized that the "potential need" derived herein is that of a physician appraisal; it would be helpful in establishing a more meaningful figure to know how the various allied health workers and the public at large would view these tasks. However, the fact that there is a significant discrepancy between the physician appraisal of what tasks could and should be performed by AHP compared to the use of such personnel in their practices indicates a trend toward and a need for more and more completely trained AHP. 9

Looking first at just those tasks that received "strong approval" (over 75% of orthopaedists approve, Table 12) for performance by AHP, it can be seen that there are four tasks for each of which over 50% of the orthopaedists do not use an allied health worker. A substantial need (10% to 40%) occurs in six categories because of somewhat higher rates of utilization of AHP. A smaller potential need was demonstrated for tasks such as obtaining routine identifying data, completing insurance forms and taking and processing x-rays, indicating that this need has largely been filled in orthopaedic practice by AHP.

It is obviously not possible to get unanimity of opinion as to what tasks could and should be performed by AHP; such long established procedures as the taking and processing of x-rays were not considered appropriate for AHP by 6% to 7% of the respondents. Although the percent that do not consider this next group of tasks appropriate is somewhat higher, 50% to 75% of the orthopaedists feel the tasks could and should be performed by AHP. Table 13 shows the eight tasks for which significant approval and substantial need exists. It illustrates that while there are fewer orthopaedists approving the use of AHP for routine screening physical examinations, taking and recording routine elements of the present illness, seeing patients on followup visits for cast and wound checks, and for cleaning and suturing minor wounds, the percentage of approval is significant and represents a new element in the training of AHP.

For those tasks for which there was less than 25% of orthopaedists

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approving their performance by an allied health worker, the potential need would appear small and will remain so without considerable change in attitudes of the profession (Table 14).

It is not the purpose of this inquiry to discuss who is qualified to perform which tasks and under what conditions. Rather it is to note that given the limitations that this estimate has, there seems to be a very large potential demand for properly trained and supervised AHP in orthopaedic practice.

2. **Availability and Use of Traditional Allied Health Personnel.** Traditional types of AHP are fairly readily available to orthopaedists (Table 15). Over 84% of orthopaedists have the availability of physical therapists, prosthetists, orthotists, social workers and public health nurses, while only 2% had none available. Availability is closely related to the population of the county in which the orthopaedist practices (Table 16).

Occupational therapists and social workers are available to a greater degree in larger counties. Generally speaking, use appears to be related to availability.

There is a variation of availability and use with type of practice (Table 17). In general, university orthopaedists have available and use AHP to a greater extent than other types of practices. The percentage of men in university practice who generally use the four allied health workers listed in Table 17 is 20% to 30% higher than average and there is a concomitant decrease in the percentage that do not have them available and never use them. It can be predicted from the availability and use of AHP in teaching institutions that orthopaedists presently training are instructed to use AHP to a greater degree than previously has been the case. It is, therefore, anticipated that as availability increases the use of these six traditional AHP will increase as well.

3. **Potential Obstacles to Increased Use of Allied Health Personnel (AHP).** The potential obstacles most often checked as "very serious", militating against the increased use of AHP are presented in Table 18. The three major obstacles relate to medicolegal problems and the lack of competently trained individuals. It seems likely that the fourth, supervision, may in fact be a function of medicolegal problems rather than a separate obstacle in itself. The first three obstacles display essentially no difference on age, type of practice, region and county size, although some obstacles seen as less serious did vary somewhat on type of practice. Solo practitioners are more apt to check financial infeasi-

bility as an obstacle (21% vs. 14%); university practitioners are apt to see job turnover as very serious (26% vs. 16%); men in full-time government practice are *less* likely to see supervision as constituting a very serious obstacle (4% vs. 18%). The first three obstacles do exist while the remainder may be somewhat more conjectural in nature.

Many of the apparent obstacles are being overcome. A look at the experience with the Medex program shows that many state legislatures have changed their medical practice laws to provide licensing of these individuals and has approved their carrying out many procedures previously reserved for licensed physicians if under the supervision of a physician (Washington, California, Utah).* Patient acceptance has been excellent and numerous instances have been recorded where patients have volunteered that they would prefer the Medex than to trouble the overworked physician with their seemingly minor problems. The M.D. satisfaction has been high as well. The Medex working in general practitioners' offices have been able to increase patient visits from 13.5% to 62.8%. The lower percentages of increase were a result of some M.D.s deciding to put in fewer hours resulting in a smaller increase than might otherwise have been the case, as well as some instances when Medex were working for more than one general practitioner causing the percentage increase to be spread over several M.D.s, since the increase in patient visits was expressed per physician.

Job turnover appears to be related largely to job satisfaction and to date this has not been a problem, although it must be recognized that the Medex are on the upper end of the economic scale for AHP.

The fact that competent AHP are not currently available in sufficient numbers to meet the physician demand is an established fact, although it appears this may soon be overcome by the development of new schools for AHP. The degree to which these schools can produce competently trained individuals will depend largely upon the selection of qualified individuals to enter the profession and the input of the medical profession into the training programs.

4. **Outcome of Increased Use of Allied Health Personnel (AHP).** Predictions about the outcome of increased use of AHP in terms of the number of patients served and the quality of the medical care provided is seen in Table 19. There were 27% of the orthopaedists who feel there would be an *increase* in patients served and an *improvement* in the

* *Medex Demonstration Progress Report.* Smith, Richard A. (In Preparation).

quality of care while 32% feel that the number of patients seen would increase without change in quality of care. On the other hand, 26% feel that this would result in a deterioration in the quality of care. The predictions vary considerably according to the age of the orthopaedist and by the type of practice although not by county size or region. Orthopaedists who have finished their training most recently are more likely to feel that the number of patients served and the quality of care will be as good or better than do orthopaedists in the oldest age group (Table 20).

More significant is the fact that those who feel that the number of patients served will increase and the quality of care will remain as good or better include fully 80% of the under 35 age group (Table 21). Reflecting this difference, there is a striking difference as well between those who feel the quality of care will deteriorate regardless of the number of patients served, where only 10% of the under 35 group indicated they feel quality would deteriorate as compared to 41% of the orthopaedists over 65. (Table 21) If these differences in age can be taken as roughly representative of the changes in orthopaedic education over the years then it would seem that the education has progressively emphasized functioning with AHP and thereby increased confidence in the quality of health care thus rendered. On the other hand, one could speculate that increasing experience leads to changed opinions regarding AHP. Since the population was sampled at only one point in time, it is difficult to tell whether the prediction represents an experience related phenomenon or rather indicates differences in orthopaedic education, although the latter explanation seems more likely.

Practice setting, as well as age, has considerable impact on the orthopaedists' predictions. Men in solo practice have the least faith that increased use of AHP will maintain or increase the quality of care and serve more patients (43%); consequently, they are most likely to feel that it might lead to deterioration in quality of care (30%). While solo practitioners are seen more commonly in the older age group, this alone does not account for the differences observed. It is probable that the solo practitioner is the type of individual who has selected this form of practice because he likes to be self sufficient. If our hypotheses are correct, namely that there is a declining rate of selection for solo practice and that present orthopaedic education increases use of and confidence in AHP in health care delivery, then the utilization of AHP

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should increase substantially due to the growing proportion of younger, more recently trained orthopaedists.

5. **Who Will Hire Additional Allied Health Personnel (AHP).** Another indication of present demand for AHP is the response to Question 14, "If additional well-trained allied health personnel were available to perform some of the tasks listed above [tasks in orthopaedic practice], would you hire such a person next year?"* Orthopaedists from the largest counties are somewhat more apt to say they would *not* hire additional AHP (25% vs. 20% over-all). The largest differences occur when practice setting is considered (Table 22). The percentage of individuals responding "yes, full-time" is over 50% for large multispecialty, university and government practices but dips to a low of 16% for solo practice (this agrees with the finding that solo practitioners are more apt to find financial problems a "very serious" problem to increased utilization of AHP than are men in other practice settings). The question allowed the orthopaedist to hedge and respond "perhaps" if he was not certain, so it seems likely that these percentages represent rather reliable opinions. This result would tend to agree with the conclusion arrived at previously that there appears to be a sizeable need for AHP in orthopaedic surgery although one cannot conclude from this question the exact quantity or what variety of AHP is most needed.

C. Perception of Need for Additional Orthopaedic Surgeons

The perception of a need for additional orthopaedists does not vary particularly by age or by population of the county in which the orthopaedist practices (Table 23). When reviewed in light of the type of practice however, larger differences are observed. About half of the men in university and government practices feel that additional orthopaedists are needed in their areas as compared to about a third of orthopaedists in other practice settings. This undoubtably reflects the well known need that has and continues to exist in the former practice settings (Table 24).

The region of the country also influences the perceived need for additional orthopaedic surgeons (Table 25). Only about one fourth of the orthopaedists in the Northwest and Southwest perceive a need;

* Appendix I, Question 14.

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whereas, almost 50% in the central region respond affirmatively. This would appear to be in keeping with the fact that there is a lower ratio of orthopaedists to population in the central region of the country; whereas, the highest ratios occur in the Southwest and Northwest regions.

A comparison of those who feel that more orthopaedists are needed in their area and those who do not as to whether they would hire additional AHP demonstrates that as expected, of those who feel there is need for additional orthopaedists, 46% would hire additional AHP as compared to only 29% for those who feel no more orthopaedists are needed in the area in which they practice.

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D. Perceived Need for Orthopaedists and Orthopaedist to Population Ratios

In general, there seems to be a strong correlation between the number of orthopaedists per population and the perceived need for more orthopaedists, when single counties are examined. There are some exceptions when larger areas are considered (states), although these discrepancies actually highlight geographic distribution problems.

When the orthopaedist population ratio is 6:100,000 or greater, very few perceive a need for additional orthopaedists in their area. When the ratio drops to between 3–6:100,000, about 35% perceive a need for more orthopaedists. When the population ratio drops to 1.5:100,000, the percent who feel more orthopaedists are needed in their area rises to approximately 70%. This is illustrated by the sparsely populated states such as Iowa with 1.6 orthopaedists per 100,000 population and 80% responding "yes" more orthopaedists are needed; Kentucky with 1.6 with 63% feeling more are needed, and West Virginia with 1.5 with 70% feeling more are needed. An exception to this trend is Alaska with 2.8 orthopaedists per 100,000 yet with only 33% feeling more orthopaedists are needed in their area. In this case the area perceived by the orthopaedist represents the area in which they practice, principally Anchorage, rather than the entire state. In somewhat more densely and uniformly populated areas such as Sacramento county, California, with 6.6 orthopaedists per 100,000 population, no one feels more orthopaedists are needed. Santa Clara county, California, with a ratio of 5.4:100,000, has only 26% who feel more orthopaedists are needed. Dade county, Florida, with 3.3:100,000 has 36% who feel more orthopaedists are needed.

An illustration of a distribution problem can be found in Cook County, Illinois, which has an orthopaedist to population ratio of 1.8:100,000. Here only 25% feel more orthopaedists are needed, with 28% uncertain and 47% saying definitely no. This is generally true in the larger, more heterogenous population areas. The percentage uncertain is significantly higher and there is a larger group who feel no more are needed than would be predicted from the orthopaedist to population ratio.

While statistics such as this are difficult to convert to the need for absolute numbers of individuals, it would appear reasonable to conclude that given the same type of practices and similar use of AHP and hours worked per week, a ratio of one orthopaedist per 20,000 to 30,000 population would appear realistic. Certainly there appears to be little need expressed for orthopaedists in areas with ratios above that level, while at the same time there is a crying need for orthopaedists when the ratio drops below 1:50,000 population. The great weakness in these figures is that they fail to take into account those orthopaedists who are not Board certified and those in residency programs who are rendering significant care for people afflicted with orthopaedic problems. The current ratio of certified orthopaedists to population, 2.33 per 100,000 population, becomes 4.21 if all individuals who classify themselves as orthopaedists in the yearly AMA survey are included. While little is known about this other group of orthopaedists, it is safe to predict that the proportion of certified to noncertified orthopaedists is increasing and hence the latter group will become less significant in numbers over time.

D. Hours per Week

Age, rather than county size, region of the country or type of practice, seems to have the strongest effect on the total hours worked per week (Table 26), with the average work week being 54 hours. What is perhaps surprising is that there are an estimated 195 orthopaedists practicing past the age of 65 of which 53% are working more than a 40 hour work week. While the practice setting does not seem to have much effect on the total hours per week (Table 27), men in government practice have an average that is somewhat higher than other types of practice. There is also a surprising similarity among practices on the amount of time spent in hospital and office practice and other medically related work except for those in university and government prac-

tice. In university practice a far larger segment of time (average 22 hours per week) is spent in other medically related activities rather than office or hospital practice whereas in government work there is a higher percentage of time spent in hospital practice. Hours worked per week did not relate strikingly to opinions about the use of AHP and those that worked the most hours per week use AHP only slightly (0 to 4%) more than the remainder of the sample.

E. Constraints on Practices of Orthopaedics

An open-ended question requesting any constraint or constraints that the orthopaedist feels is inhibiting the practice of orthopaedics was presented.* The question drew a 64% response, and constraints cited were on almost every subject imaginable. To facilitate analysis the responses were coded into five categories. Category 1—no restraints: category 2—those related to attitudes, beliefs, or opinions that anyone (patients, public, people, etc.) might have; category 3—those that cited governmental laws or regulations; category 4—those relating to malpractice: category 5—those constraints relating to ineffective, inefficient organization and/or lack of resources (Table 28).

Malpractice related constraints loomed the largest. There is little bearing according to size of county although the slight difference between the less than 50,000 group and the more urban areas is statistically significant (p less than .05, Table 29).

Somewhat larger is the variation relating to the age of the orthopaedist and the likelihood of his listing malpractice related constraints. Over half of the 35 and under group (51%) listed malpractice related constraints as their primary problem. This declined steadily to only 30% for the over 65 group (Table 30). At least two interpretations of this finding are possible, either malpractice related problems are somewhat less frequent as one gets older or alternatively the orthopaedists who completed training and began practice more recently are more sensitive to malpractice problems. In the former case the older orthopaedist would be involved less often precisely *because* he is older, while in the latter the younger orthopaedists are thought of as actually seeing problems no more frequently but consider the possibility of a given malpractice related problem as more threatening. One interpretation

* Appendix I, Question 20.

does not necessarily exclude the other and it may well be that both have merit. An explanation for the latter interpretation may be that younger orthopaedists often tend to cover emergency rooms that provide care for a transient population, where the opportunity to build rapport and work up patients in detail is limited.

Evaluating primary constraints in relation to the practice setting shows little variation except in university practice, where orthopaedists view technical resource problems as the primary constraint and malpractice secondary (Table 31). The fact that orthopaedists in university related practices mention malpractice constraints much less than average (28% vs. 43%) probably reflects fewer problems due to: a) seeing fewer patients, b) the protection that an institution provides, c) extensive record keeping and surveillance, d) multiple consultations through rounds and conferences, and e) the association of an orthopaedist with a prestigious institution by patients and attorneys. Finally, it may be that the malpractice problem looms large but problems related to inefficient organization and lack of resources (technical resource) pose even a greater problem in their particular situation. Considering all practices, of those who mention two problems and cite technical resource constraints first, 42% mentioned malpractice as their second constraint.

F. Miscellaneous Results

1. **Hospital Trips per Day for Teaching or Patient Visits.** The number of trips per day for patient visits was remarkably constant at approximately 2.2, although it was slightly higher for multispecialty practices less than 20 (2.8) and slightly lower for multispecialty practices greater than 20 (1.5), university (.8) and government (.4) practices. The average trips per day for teaching visits was likewise fairly constant at .6 with the exception of the multispecialty groups less than or equal to 20 who average 1.4.

The number of hospitals where the orthopaedist teaches or sees patients is remarkably constant for all groups as well, averaging 2.8. There were no appreciable population variations.

III. DISCUSSION AND CONCLUSION

18 The demographic distribution of orthopaedists is relatively uniform throughout the regions of the country by age and practice setting except for a somewhat higher number of solo practitioners in the Northeast region. The larger counties have higher proportions of orthopaedists, and solo and partnership practice settings predominate. There appears to be a dramatic and steady decline in the number of individuals in solo practice and a proportionate rise in the numbers in small partnerships (less than 4). The percentage of practitioners in other types of settings appears to be remaining fairly constant. Assuming this trend will continue, it can be predicted that small orthopaedic partnerships will be the predominant structure for delivery of orthopaedic care in the future. The extent to which this or other types of practice setting might render more efficient orthopaedic care than any other could not be determined by this survey.

There is significant regional variation in the concentration of orthopaedists as well as variation within geographic region, state or county. Any attempt to estimate the optimum orthopaedist to population ratio from this as with other previous studies is fraught with great hazard. It does appear however, based on the orthopaedists' perceived need, that there is no need for more orthopaedists when the ratio rises above 1:15,000, and a critical need when the ratio drops below 1:50,000. Taking all factors into consideration, it would appear that a ratio between 1:20,000 and 1:30,000 would appear optimum.

Given the current ratio of 1:43,000, it becomes important to analyze how the deficiency in numbers is being met. Based on data available from residency positions filled plus the numbers of individuals taking the in-training examination, it would appear that it is conservative to estimate that there will be in excess of 500 people completing their residency training in 1971, and the figure is probably closer to 600. This would mean that if the output of orthopaedists remains constant and the population of the United States increases by the average of the

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predictions of the Census Bureau, by 1980 the orthopaedist to population ratio would be 1:25,000. If, however, the training programs *accelerate* in numbers of individuals produced annually at the same rate that they have over the past ten years, there will be about 860 orthopaedists completing their training in 1980 which will mean by that time the ratio of orthopaedists to population will be 1:22,000. The above estimates and projections of need to assume that orthopaedists will retire at age 65, will continue to work at 54 hour work week during their active practice years, and that they will continue with the same type of practice pattern as when this survey was made. It therefore appears that in terms of the absolute number of orthopaedists, the present production of orthopaedists will have largely corrected the numerical deficiencies by 1980, and while there is information that would tend to support that the younger orthopaedists are entering practice in smaller communities hence tending to correct the distribution problem, it is highly unlikely that the inequitable distribution can be corrected without some kind of active program. The softness of these estimates derived from the perceived need for more orthopaedists only highlights the need for both an in-depth study of various orthopaedic practice settings and an in-depth study of various areas of the country to determine how and where orthopaedic conditions are being cared for and to explore the magnitude of the unmet needs.

While the absolute numbers and types of AHP under supervision of physicians needed currently and to meet future demands cannot be answered by this questionnaire, the majority of orthopaedists perceive a need for additional AHP in their practices.

From the strong approval of increased use of AHP under direct orthopaedic supervision yet minimal utilization, it would appear that there is a large potential need for AHP in orthopaedics who have been trained to: 1) perform routine measurements of the range of motion of joints, obtain height and circumference measurements, muscle testing, etc., 2) obtain routine social and family histories, 3) assist at operations, 4) apply dressings and simple traction devices, 5) teach patient exercise programs, 6) assist patients in family or vocational counseling, and 7) teach patient crutch walking.

While there is less unanimity of opinion as to the advisability of using AHP under supervision of physicians for the following tasks, 25% to 75% of the orthopaedists feel they could and should perform

these tasks and the need is substantial: 1) obtain and record routine present illness and past history, 2) make routine hospital rounds to check on traction, casts, 3) direct nursing, physical and occupational therapy programs, 4) conduct routine screening physical examination of the musculoskeletal system, 5) apply casts for nonacute problems, 6) see patients on followup visits for cast and wound checks, 7) remove dressing and sutures, 8) adjust splints, braces, 9) administer intravenous fluids and blood, and 10) clean and suture minor wounds. The fact that the younger orthopaedist in general has a greater acceptance of the use of AHP for such tasks and the increasing proportion of orthopaedists in the younger age group would indicate an ever increasing need for such individuals. While data is not currently available dealing with the efficiencies achieved in practice through the added use of AHP, if one can extrapolate from the use of physician assistants in family practice (Medex), it seems likely that the orthopaedist would be able to manage approximately 40% (13.5% to 63%) more patients with the use of appropriate trained AHP. Any information that becomes available on this subject should be taken into account in estimating the number of orthopaedists that will be necessary in the future.

The current constraints, both on orthopaedic practice and on the extended use of AHP, revolve largely around the medicolegal aspects of practice and the lack of availability of qualified appropriately trained individuals. Public acceptance and financial considerations do not appear to be a major barrier. The fact that a significant number of orthopaedists, particularly in the younger age groups, feel that increased use of AHP will produce both an increase in the number of patients seen and an improvement or no change in the quality of care delivered would seem to indicate that there will be a general trend in this direction regardless of organizational or governmental direction. The fact that numerous states are changing medical practice and licensure laws to make the extended use of such personnel practical would indicate that the major restraint that must be overcome is the ever-threatening liability problem, and until there is relief in this direction, it will continue as a dampening influence on the full utilization of AHP by orthopaedists.

As does any questionnaire study, this study has many limitations. However, it emphasizes the continued cooperation and willingness of orthopaedists to spend considerable time and effort in attempting to

develop some scientific basis for the decision making process. These decisions involve not only selecting how best they can continue to provide quality care for their patients, but delineate as well what must be done in order to reach all segments of our society with this high level of care for disorders affecting the musculoskeletal system.

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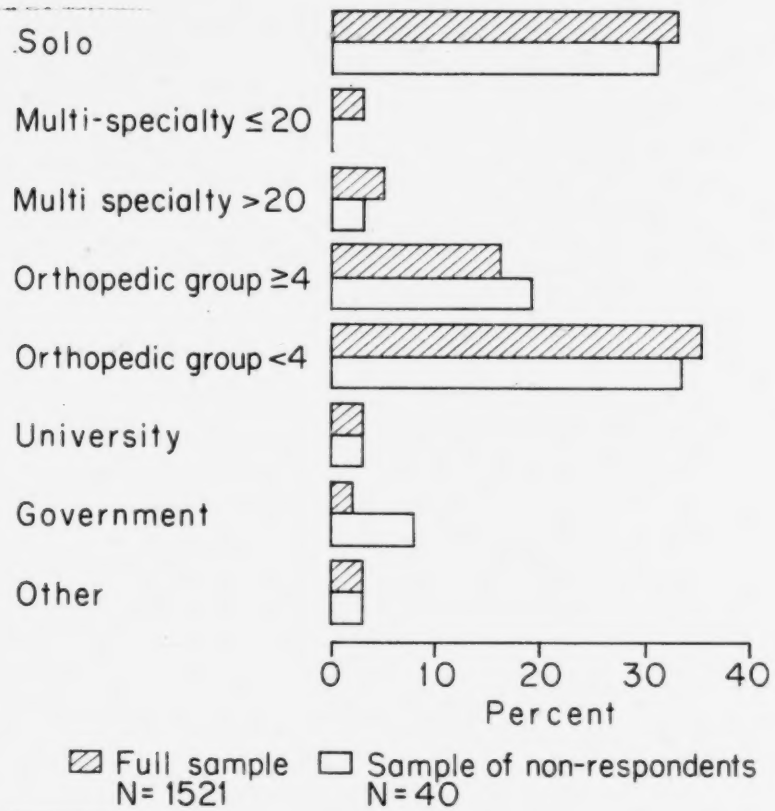
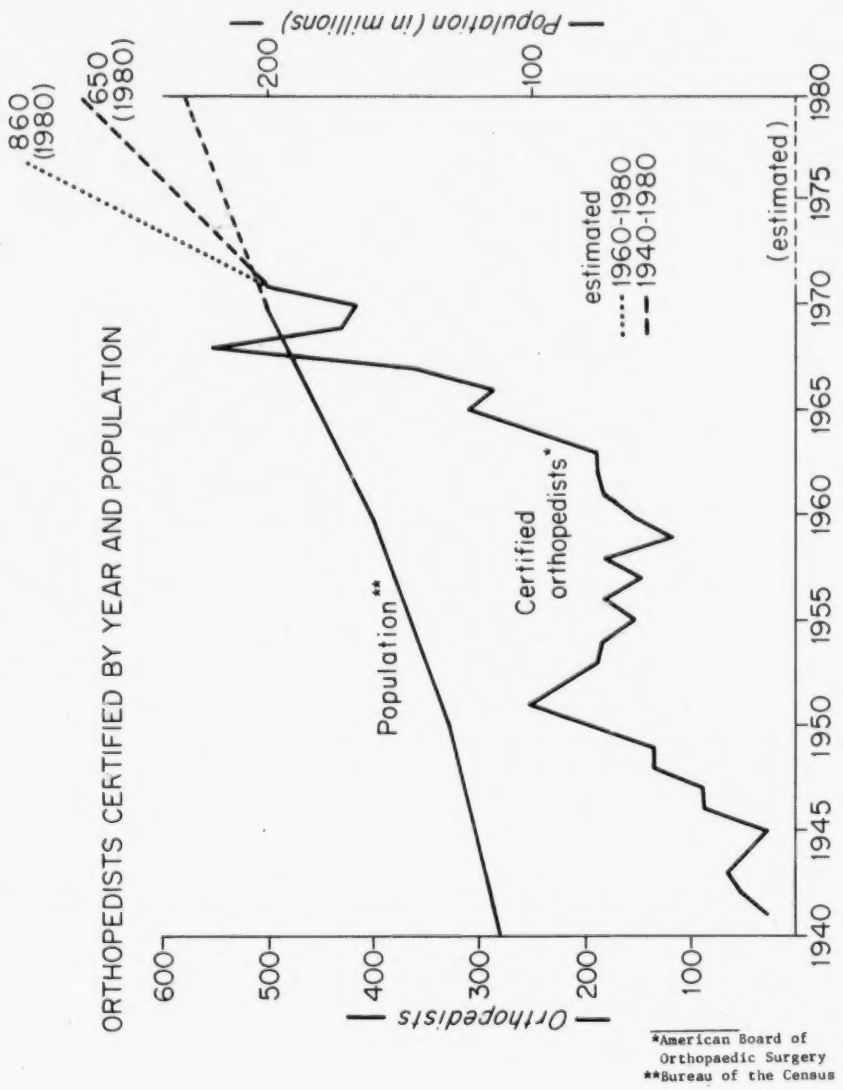
TABLE 1

FULL SAMPLE AND SAMPLE OF NON-RESPONDENTS BY TYPE OF PRACTICE*



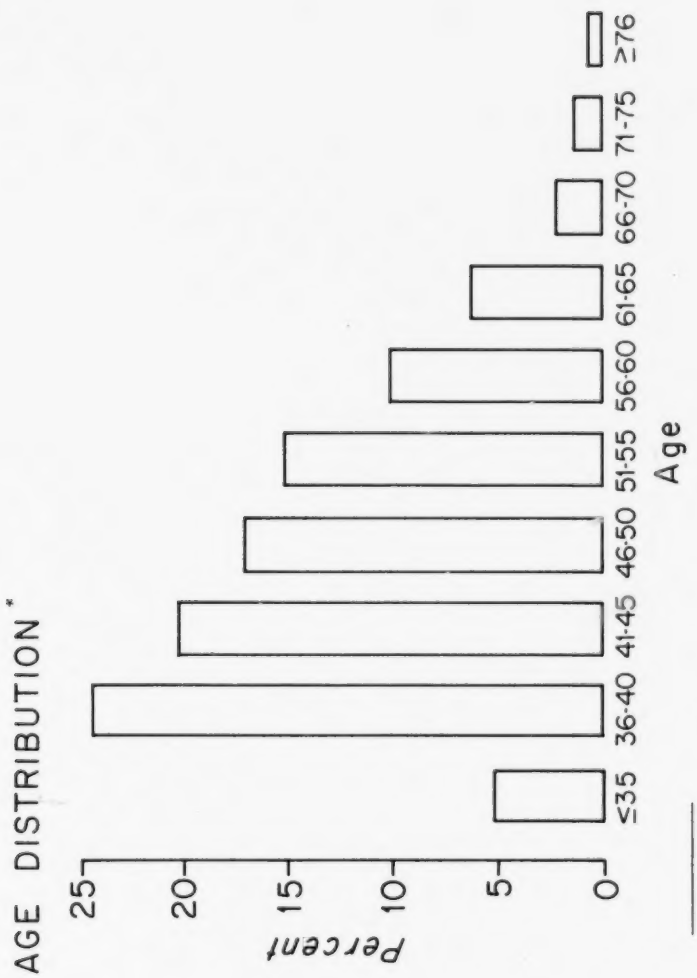
*These categories were provided, and respondents selected appropriate responses; see Appendix I, Question #5.

TABLE 2



*American Board of Orthopaedic Surgery
**Bureau of the Census

TABLE 3



*Appendix I, Question #1.

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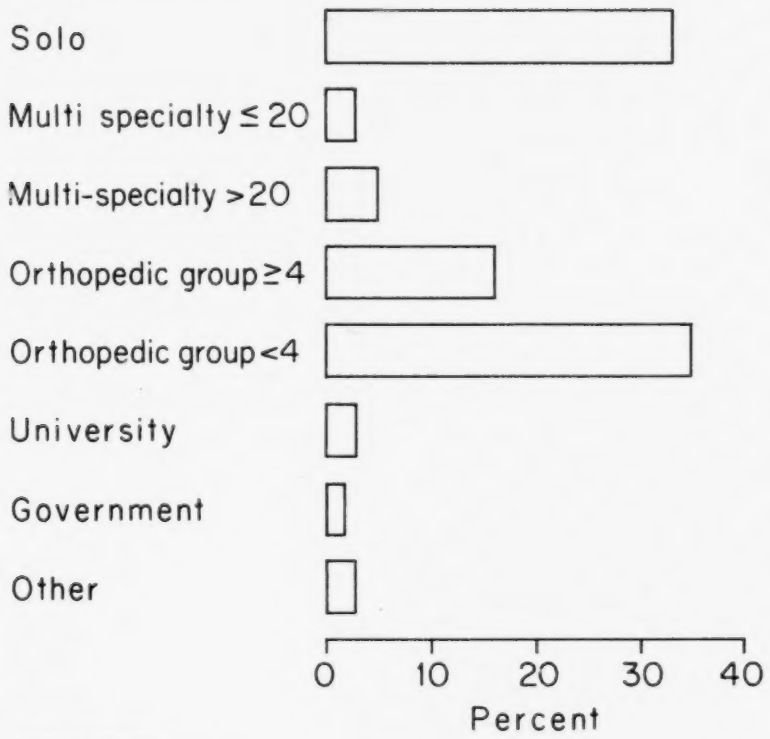
TABLE 4

PRACTICE SETTING*



*Appendix I, Question #5.

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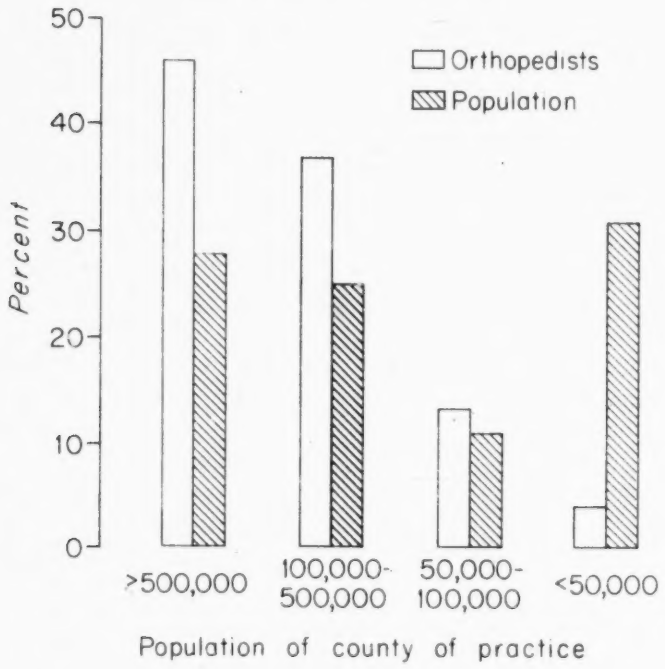
TABLE 5

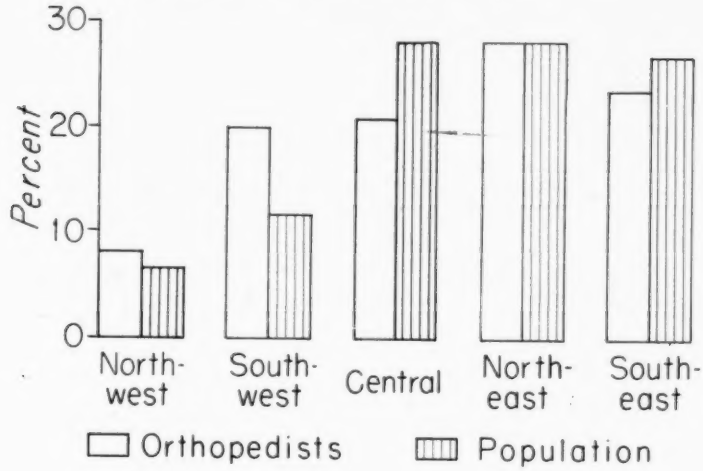
COUNTY SIZE* AND POPULATION



*Appendix I, Question #3.

TABLE 6

REGION** AND POPULATION



**Appendix II.

TABLE 7

ORTHOPEDISTS / 100,000 POPULATION

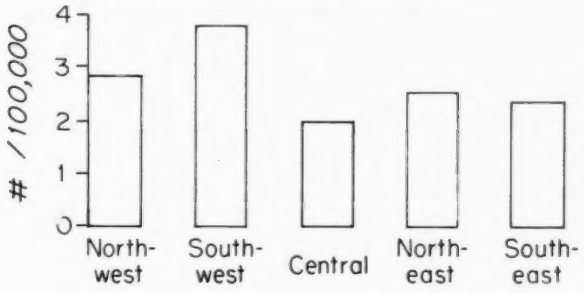


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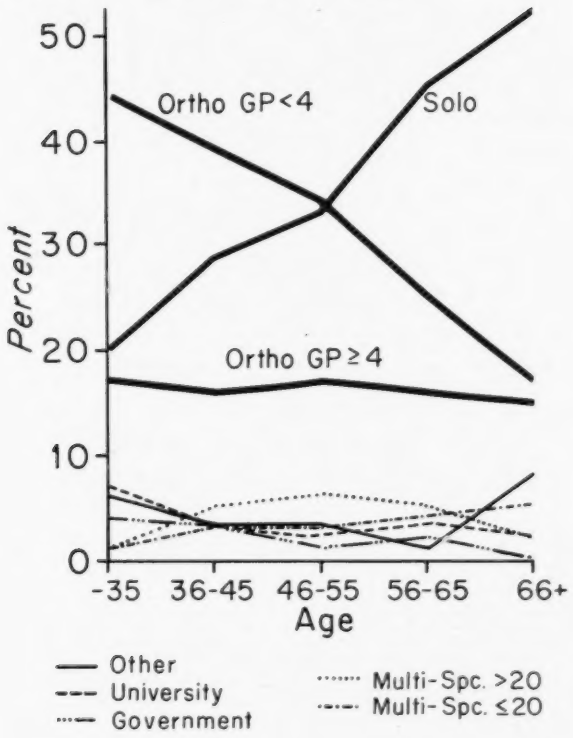
TABLE 8

Type of Practice*
Within Each Age Group



*Appendix I, Question #5.

15 16

AGE DISTRIBUTION*

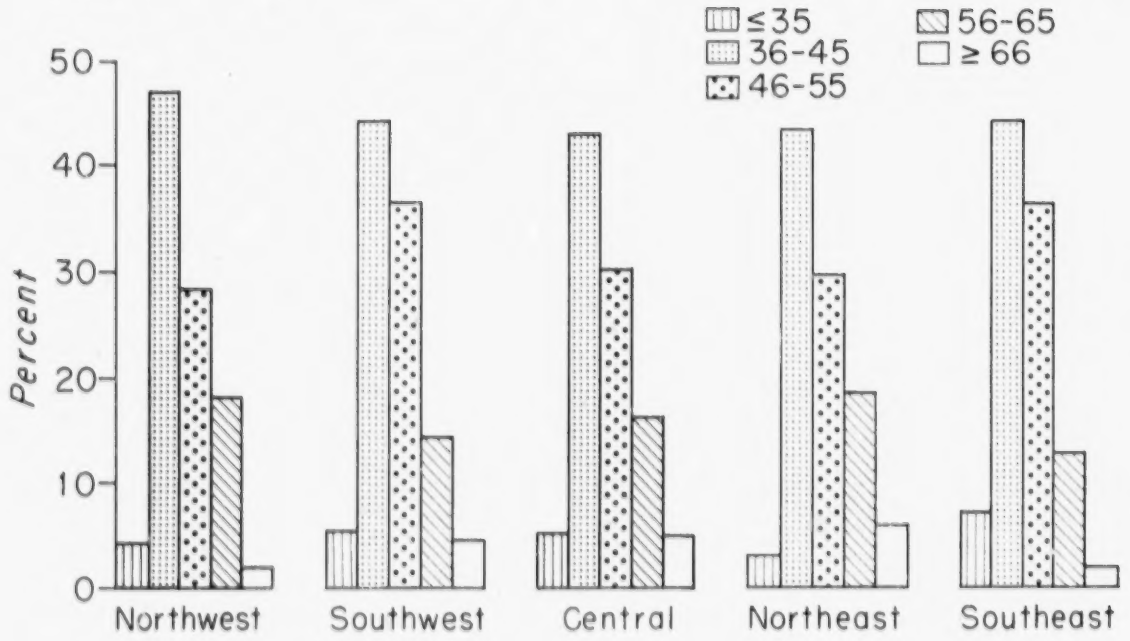


TABLE 9

*Appendix I, Question #1

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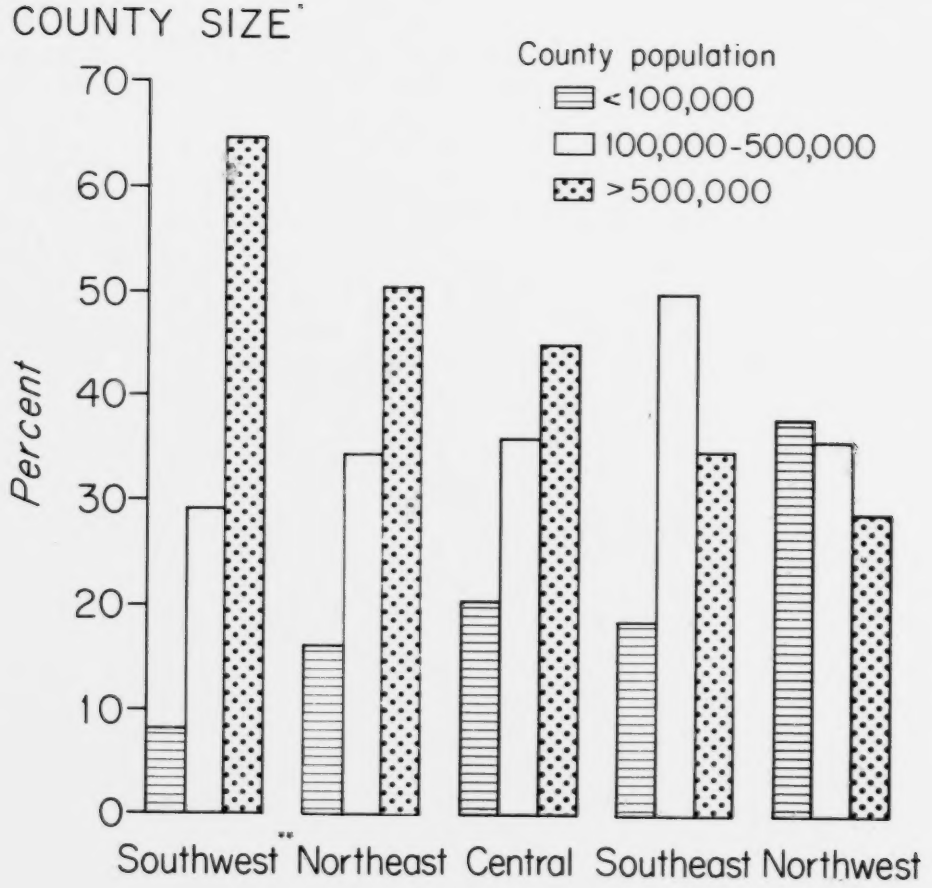
TABLE 10



**

*Appendix I, Question #3.

**Appendix II.

TABLE 11—TASKS IN ORTHOPAEDIC PRACTICE*

32 Ranked by % Approval for Performance by AHP

Obtains identifying data (name, address, insurance, etc.)	99%
Teaches patients crutch walking	98%
Completes insurance forms	95%
Teaches patients exercise programs	94%
Processes x-rays	94%
Takes x-rays	93%
Obtains routine social and family history	87%
Assists at operations	85%
Assists patients in family or vocational counseling	84%
Performs routine measurements of: height, length, circumference, etc.	83%
Applies simple traction devices	80%
Performs routine measurements of: range of motion	77%
Performs routine measurements of: muscle testing	77%
Applies dressings	77%
Adjusts splints and braces	73%
Administers intravenous fluids, blood, etc.	73%
Removes dressings/sutures	72%
Obtains routine past history	68%
Applies casts for non-acute problems	56%
Makes routine hospital rounds to direct physical occupational therapy program	54%
Makes routine hospital rounds to check on: traction, casts, etc.	52%
Takes and records routine elements of present illness	48%
Makes routine hospital rounds to direct routine nursing program	47%
Conducts routine screening for physical examinations of musculo-skeletal system	46%
Sees patients on follow-up visits for casts and wound checks	32%
Cleans and sutures minor wounds	25%
Performs minor surgical procedures	13%
Applies casts for acute problems	7%

* Appendix I, Question #13.

TABLE 12—POTENTIAL NEED FOR THOSE TASKS IN ORTHOPEDIC PRACTICE STRONGLY APPROVED* FOR PERFORMANCE BY AHP (>75% approval by orthopedists)**

Potential Need: [Percent responding "could and should"] minus [percent utilizing allied health workers for task]

Potential Need: *Large—>50%*

1. Performs routine measurements of: Range of Motion
2. Performs routine measurements of: Height, length, circumference, etc.
3. Obtains routine social and family history
4. Assists at operations

Potential Need: *Substantial—10–49%*

1. Applies dressings
2. Applies simple traction devices
3. Performs routine measurements of: Muscle testing
4. Teaches patients exercise programs
5. Assists patients in family or vocational counseling
6. Teaches patients crutch walking

Potential Need: *Small—<10%*

1. Completes insurance forms
2. Obtains identifying data (name, address, insurance, etc.)
3. Takes x-rays
4. Processes x-rays

*Approval is indicated by the response that an allied health worker (AHP) with appropriate training, directly responsible to the orthopedist, "*could and should*" perform the task.
**Appendix I, Question#13.

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TABLE 13—POTENTIAL NEED FOR THOSE TASKS IN ORTHOPEDIC PRACTICE APPROVED BY 50–74%* FOR PERFORMANCE BY AHP**

Potential Need: [Percent responding "could and should"] minus [percent utilizing allied health workers for task]

Potential Need: *Substantial—10–49%*

1. Obtains routine past history
2. Makes routine hospital rounds to check on: traction, casts, etc.
3. Directs routine nursing program
4. Directs physical occupational therapy program
5. Applies casts for non-acute problems
6. Adjusts splints and braces
7. Administers intravenous fluids, blood, etc.
8. Removes dressings/sutures

*Approval is indicated by the response that an allied health worker (AHP) with appropriate training, directly responsible to the orthopedist, "*could and should*" perform the task.
**Appendix I, Question #13.

TABLE 14—POTENTIAL NEED FOR THOSE TASKS IN ORTHOPEDIC PRACTICE APPROVED BY 25–49%* FOR PERFORMANCE BY AHP**

Potential Need: [Percent responding "could and should"] minus [percent utilizing allied health workers for task]

Potential Need: *Substantial—10–49%*

1. Conducts routine screening for physical examinations of the muscoloskeletal system
2. Takes and records routine elements of present illness
3. Sees patients on follow-up visits for casts and wound checks
4. Cleans and sutures minor wounds

*Approval is indicated by the response that an allied health worker (AHP) with appropriate training, directly responsible to the orthopedist, "*could and should*" perform the task.
**Appendix I, Question #13.

TABLE 15—AVAILABILITY* OF SPECIFIC COMBINATIONS OF ALLIED HEALTH PERSONNEL (AHP)**

65%	Have available:	Occupational Therapist Physical Therapist Prosthetist/Orthotist Social Worker Public Health Nurse Vocational Counselor
15%	Have available:	Occupational Therapist Physical Therapist Prosthetist/Orthotist Social Worker Public Health Nurse
4%	Have available:	Physical Therapist Prosthetist/Orthotist Social Worker Public Health Nurse
10%	Have miscellaneous combinations available (largest single category $\leq 3\%$)	
2%	Have *none* available	
100%		

*Appendix I, Question #10.

**Occupational Therapist
Physical Therapist
Prosthetist/Orthotist
Social Worker
Public Health Nurse
Vocational Counselor

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TABLE 16—AVAILABILITY AND USE OF ALLIED HEALTH PERSONNEL* BY POPULATION OF COUNTY OF PRACTICE**

NOT AVAILABLE to My Patients:

	<50,000	50,000–100,000	100,000–500,000	>500,000	All
Occupational Therapist	55%	44%	24%	14%	23%
Physical Therapist	5%	2%	1%	2%	2%
Prosthetist/Orthotist	12%	5%	2%	3%	3%
Social Worker	20%	15%	8%	4%	8%
Public Health Nurse	5%	4%	2%	4%	3%
Vocational Counselor	26%	15%	13%	12%	14%

NEVER USED with My Patients:

	<50,000	50,000–100,000	100,000–500,000	>500,000	All
Occupational Therapist	52%	50%	30%	25%	31%
Physical Therapist	0%	1%	0%	1%	1%
Prosthetist/Orthotist	4%	4%	1%	3%	2%
Social Worker	4%	4%	1%	3%	2%
Public Health Nurse	24%	21%	13%	11%	14%
Vocational Counselor	33%	28%	25%	31%	28%

* Occupational Therapist
Physical Therapist
Prosthetist/Orthotist
Social Worker
Public Health Nurse
Vocational Counselor

** Appendix I, Questions #10 & #11.

TABLE 17—AVAILABILITY AND USE OF AHP* BY TYPE OF PRACTICE**

AHP "AVAILABLE" AND "REGULARLY" USED

	UNIVERSITY PRACTICE		ALL OTHER PRACTICES	
	Available to all my pts.	*Used Regularly*	*Available to all my pts.*	*Used Regularly*
Occupational Therapist	85%	43%	52%	13%
Physical Therapist	98%	89%	93%	88%
Prosthetist Orthotist	98%	83%	90%	60%
Social Worker	81%	70%	71%	34%
Public Health Nurse	91%	52%	76%	23%
Vocational Counselor	90%	47%	65%	16%

*Occupational Therapist
Physical Therapist
Prosthetist Orthotist
Social Worker
Public Health Nurse
Vocational Counselor

**Appendix I, Questions #10 & #11.

TABLE 18—POTENTIAL OBSTACLES TO INCREASED USE OF AHP*

Ranked by % Responding "Very Serious"

59%.....Insurance liability problems
50%.....Competent, trained allied health workers not presently available for employment
34%.....State medical practice laws
18%.....Supervision of allied health workers
17%.....If regular patient load increased too much, "emergency" calls will get out of hand
16%.....Job turnover of allied health workers
12%.....Not feasible financially in solo private practice
12%.....Doctor-patient relationship would suffer
8%.....Not feasible because of lack of office space
7%.....Patients would not accept allied health workers

*Appendix I, Question #18.

TABLE 19—PREDICTIONS OF OUTCOME OF INCREASED USE OF ALLIED HEALTH PERSONNEL (AHP)*

Question: Listed below are some statements which describe what *might* happen if Board qualified orthopaedic practitioners made greater use of allied health workers in their practice to carry out the tasks outlined in the previous questions. Which of the statements best expresses your personal opinion of what might generally happen? Check *only* one

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32% An increase in the number of patients the practitioner serves, without change in the quality of service.

22% An increase in the number of patients the practitioner serves, but with deterioration in the quality of service.

27% An increase in the number of patients the practitioner serves and an improvement in the quality of service.

8% No change in the number of patients the practitioner serves, but with improvement in the quality of service.

4% No change in the number of patients the practitioner serves, but with deterioration in the quality of service.

7% No change in the number of patients the practitioner serves, or the quality of service.

100%

Summary of the Above:

		Quality of Care			
		Improve	*No Change*	*Deteriorate*	
# of Patients	Increase	27%	32%	22%	Total = 100%
	No change	8%	7%	4%	

* Appendix I, Question #19.

TABLE 20—PREDICTIONS OF OUTCOME OF INCREASED USE OF ALLIED HEALTH PERSONNEL (AHP)*

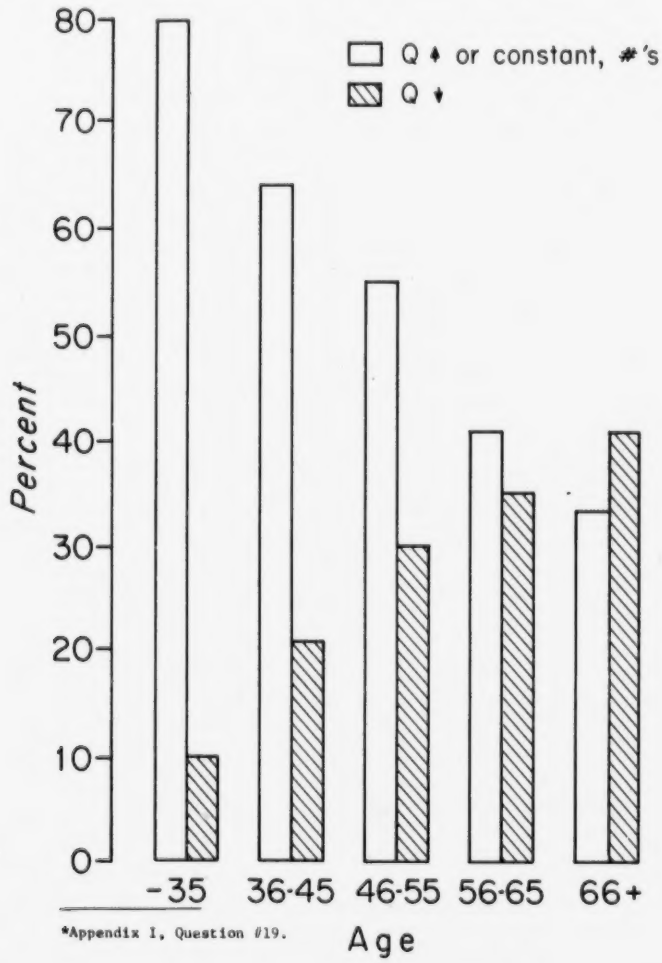
	Age		*Quality of Care* *Improve*	*No Change*	*Deteriorate*	
# of Patients	0–35	Increase	35%**	45%	7%	= 100%
		No Change	7%	3%	3%	
	66+	Increase	21%	13%	35%	= 100%
		No Change	13%	12%	6%	

* Appendix I, Question #19.

** All %'s are of the total orthopedists in that age group.

TABLE 21

PREDICTIONS ABOUT QUANTITY (#'s) AND QUALITY (Q) OF CARE WITH INCREASED USE OF AHP*



*Appendix I, Question #19.

TABLE 22—WOULD HIRE ADDITIONAL AHP* BY TYPE OF PRACTICE

Type of Practice	No	Yes Full-Time	Yes Part-Time	Perhaps
Solo	34%**	16%	17%	33%
Multi-specialty ≤20	21%	37%	16%	26%
Multi-specialty >20	6%	57%	5%	32%
Orthopaedic Group ≥4	17%	40%	5%	38%
Orthopaedic Group <4	19%	33%	10%	38%
University	22%	53%	9%	16%
Government	14%	79%	–0–	7%
Other	30%	42%	6%	22%
All Practices	23%	31%	11%	35%

* Appendix I, Question #14.

** Percentages exclude "not applicable to my situation" responses.

TABLE 23—PERCEPTION OF NEED FOR ADDITIONAL ORTHOPAEDISTS* BY POPULATION OF COUNTY OF PRACTICE

County Population	"Do you feel that additional orthopaedic surgeons are needed for the area in which you practice?" Yes	Uncertain	No	Total
<50,000	39%	16%	45%	100%
50,000–100,000	38%	16%	46%	100%
100,000–500,000	32%	21%	47%	100%
>500,000	33%	22%	45%	100%

(Age shows no important differences)

* Appendix I, Question #21.

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TABLE 24—PERCEPTION OF NEED FOR ADDITIONAL ORTHOPAEDISTS* BY TYPE OF PRACTICE

Type of Practice (Ranked by % "yes")	*"Do you feel that additional orthopaedic surgeons are needed for the area in which you practice?"*
University	52%
Government	48%
Orthopaedic Group <4	38%
Multi-specialty ≤ 20	32%
Multi-specialty >20	32%
Orthopaedic Group ≥ 4	30%
Other	30%
Solo	29%
All Practices	33%

* Appendix I, Question #21.

TABLE 25—PERCEPTION OF NEED FOR ADDITIONAL ORTHOPAEDISTS* BY REGION**

Region	*"Do you feel that additional orthopaedic surgeons are needed for the area in which you practice?" Yes*
Northwest	26%
Southwest	26%
Central	46%
Northeast	32%
South and Southeast	32%
All regions	33%

* Appendix I, Question #21.
** Appendix II

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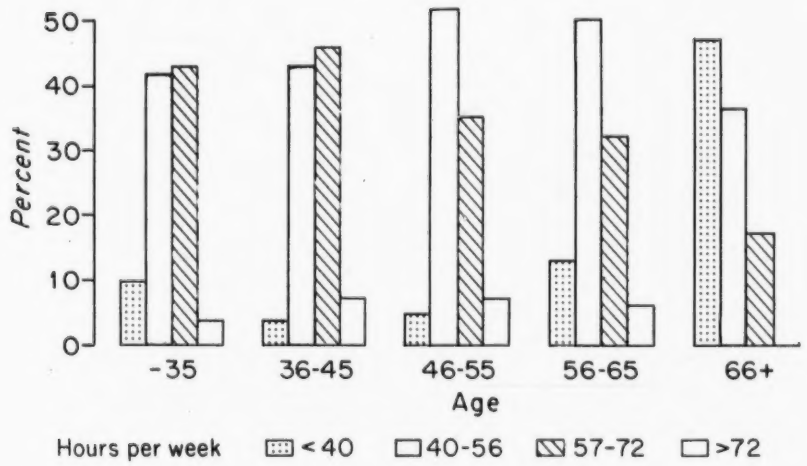
TABLE 26

HOURS PER WEEK BY AGE *

42



*Appendix I, Question #8.

TABLE 27— HOURS PER WEEK* BY TYPE OF PRACTICE

Type of Practice	*Average Hours/Week in Hospital*	*Average Hours/Week in Office*	*Average Hours/Week— Other (Medical Related)*	*Average Hours/Week Total*
Solo	25	26	5	54
Multi-specialty ≤20	23	27	4	54
Multi-specialty >20	21	26	7	53
Orthopaedic Group ≥4	24	24	6	53
Orthopaedic Group ≥4	27	24	5	55
University	22	15	22	54
Government	37	20	8	59
Other	21	21	11	48
All	25	24	4	54

* Appendix I, Question #8.

TABLE 28—CONSTRAINTS ON ORTHOPAEDIC PRACTICE*

Primary Constraints:

7%.....None

3%....."Attitude Related"
Any attitude, opinion or belief held by "people" that was mentioned as a constraint on the practice of orthopaedics. For example "my patients would never exccept x," or "people confuse good access with good medical care."

11%....."Government Regulation"
Direct references to governmental regulation or laws which are seen as imposing constraints on the practice of orthopaedics exclusive of malpractice laws.

43%....."Malpractice"
Any mention of the "malpractice problem" related either to the physician himself or any potential allied health personnel. "I am reluctant to try new procedures because of malpractice risk" is an example.

36%....."Technical Resource"
Any problems that were perceived as primarily technical; that is, those practices that are seen as inefficient due to a lack of organization or perhaps a shortage of resources. Generally, these comments are of a practical nature, usually taking the form of a recommendation that the orthopaedist feels would result in greater efficiency.

100%.....(those who cited at least one constraint; 64% of total)

* Appendix I, Question #20.

TABLE 29—SPECIFIC CONSTRAINTS ON PRACTICE OF ORTHOPAEDICS* BY COUNTY SIZE

County Population	% of Group Listing Malpractice as Primary Constraint
<50,000	35%
50,000–100,000	40%
100,000–500,000	41%
>500,000	45%

* Appendix I, Question #20.

TABLE 30—SPECIFIC CONSTRAINTS ON ORTHOPAEDIC PRACTICE* BY AGE

Age	% of Each Group Listing Malpractice as Primary Constraint
0–35	51%
36–45	46%
46–55	40%
56–65	37%
66+	30%

(Remaining constraints show no difference on Age.)

* Appendix I, Question #20.

TABLE 31—CONSTRAINTS ON ORTHOPAEDIC PRACTICE* BY TYPE OF PRACTICE

	Constraint	
Type of Practice	Malpractice	Technical/Resource
University	28%	48%
Government	44%	22%
Multi-specialty ≤20	50%	18%
All Practices	43%	36%

(Other combinations of constraints and types of practice show little difference.)

* Appendix I, Question #20.

APPENDIX I

ORTHOPAEDIC MANPOWER SURVEY
AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS
AMERICAN MEDICAL ASSOCIATION

GENERAL DATA

1. My age is _____.
2. My practice is in _____ (county), _____ (state).
3. Population of county in which you practice.
   _____ less than 10,000
   _____ 10,000–50,000
   _____ 50,000–100,000
   _____ 100,000–500,000
   _____ over 500,000
4. How would you characterize the area from which the majority of your patients come?
   _____ affluent city dwellers
   _____ middle class city dwellers
   _____ deprived city dwellers
   _____ suburban
   _____ small town not adjacent to metropolitan area
   _____ rural
5. Type of practice
   _____ solo
   _____ multi-specialty 20 or under
   _____ multi-specialty over 20
   _____ orthopaedic group or partnership 4 or more
   _____ orthopaedic group or partnership less than 4
   _____ full-time university
   _____ government service
   _____ other (specify)_____

6. If any type of group practice, number of *orthopaedists* in your group _____.

7. Indicate which description best characterizes your office.
   _____ I maintain only one office.
   _____ I maintain two offices.
   _____ I maintain three or more offices.

8. In a typical week of practice:
   a. How many hours did you spend in your office? _____
   b. How many hours did you spend in hospital practice? _____
   c. How many hours did you spend in other medical-related activities (community service, teaching, research, etc.)? _____

OFFICE PERSONNEL

9. Check the number of individuals employed full or part-time in your office or offices regardless of the number of orthopaedists involved.

	Full Time				
	0 None	1	2	3	4 or more
Nurse					
Orthopaedic technician					
Secretary/receptionist					
Business Mgr/bookkeeper					
X-ray technologist					
Physical therapist					
Other (specify)					

	Part-Time				
	0 None	1	2	3	more
Nurse					
Orthopaedic technician					
Secretary/receptionist					
Business Mgr/bookkeeper					
X-ray technologist					
Physical therapist					
Other (specify)					

10. Availability of allied health personnel. Check the appropriate box for each occupation.

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	Not available to my patients 0	*Available to my hospital patients only* 1	*Available to my patients in community only* 2	*Available to both hospitalized & non-hospitalized patients* 3
Occupational therapist				
Physical therapist				
Prosthetists/Orthotists				
Social Worker				
Public Health Nurse				
Vocational Counselor				

11. Use of allied health personnel. Check the appropriate box for each occupation.

	I use them:			*I use them in:*			
	Never 1	*Occasionally* 2	*Regularly* 3	*Office* 1	*Hospital* 2	*Home* 3	*Other* 4
Occupational therapist							
Physical therapist							
Prosthetists/Orthotists							
Social Worker							
Public Health Nurse							
Vocational Counselor							

12. Listed below are a series of tasks done in orthopaedic practice. Check the box for the person who *usually* discharges this task in your practice. Check *only one* category for each item.

Items	Categories														
	Nurse 1	*Orthopaedic Assistant* 2	*Cast Technician* 3	*Laboratory or X-Ray Tech.* 4	*Physical Therapist* 5	*Occupational Therapist* 6	*Athletic Trainer* 7	*Prosthetist/Orthotist* 8	*Social Worker* 9	*Vocational Counselor* 10	*Secretary/receptionist* 11	*Business Staff* 12	*Intern or Resident* 13	*I Do Myself* 14	*Not Done* 15
1. Obtains identifying data (name, address, insurance, etc.)															
2. Obtains routine social and family history															
3. Obtains routine past history															
4. Takes and records routine elements of present illness															
5. Completes insurance forms															
6. Applies casts for acute problems															
7. Applies casts for non-acute problems															
8. Sees patients on follow-up visits for casts and wound checks	1	2	3	4	5	6	7	8	9	10	12	12	13	14	15
9. Applies simple traction devices															
10. Teaches patients exercise programs															
11. Teaches patients crutch walking															
12. Performs routine measurements of: a. range of motion															
b. muscle testing															
c. height, length, circumference, etc.															
13. Removes dressings/sutures															
14. Applies dressings															
15. Cleans and sutures minor wounds															
16. Assists at operations															

Items	Categories														
	1 Nurse	2 Orthopaedic Assistant	3 Cast Technician	4 Laboratory or X-Ray Tech.	5 Physical Therapist	6 Occupational Therapist	7 Athletic Trainer	8 Prosthetist/Orthotist	9 Social Worker	10 Vocational Counselor	11 Secretary/receptionist	12 Business Staff	13 Intern or Resident	14 I Do Myself	15 Not Done
17. Adjusts splints and braces															
18. Makes routine hospital rounds to check on: a. traction, casts, etc.															
b. directs routine nursing program															
c. directs physical occupational therapy program															
19. Administers intravenous fluids, blood, etc.															
20. Conducts routine screening for physical examinations of musculo-skeletal system															
21. Assists patients in family or vocational counseling															
22. Takes x-rays															
23. Processes x-rays															
24. Performs minor surgical procedures															

13. Some tasks listed below *could* conceivably be performed by allied health workers with appropriate training. You may feel some of them should not be delegated. Assume that an allied health worker is directly responsible to you. Indicate whether you feel the task *could and should; could but should not; could not be* performed by allied health workers.

Tasks	Could		Could Not
	Should 1	Should Not 2	3
1. Obtains identifying data (name, address, insurance, etc.)			
2. Obtains routine social and family history			
3. Obtains routine past history			
4. Takes and records routine elements of present illness			
5. Completes insurance forms			
6. Applies casts for acute problems			
7. Applies casts for non-acute problems			
8. Sees patients on follow-up visits for casts and wound checks			
9. Applies simple traction devices			
10. Teaches patients exercise programs			
11. Teaches patients crutch walking			
12. Performs routine measurements of: a. range of motion			
b. muscle testing			
c. height, length, circumference, etc.			
13. Removes dressings/sutures			
14. Applies dressings			
15. Cleans and sutures minor wounds			
16. Assists at operations			
17. Adjusts splints and braces			

Tasks	Could		Could Not
	Should 1	Should Not 2	3
18. Makes routine hospital rounds to: a. check traction, casts, etc.			
b. direct routine nursing program			
c. direct physical occupational therapy program			
19. Adminsters intravenous fluids, blood, etc.			
20. Conducts routine screening for physical examinations of the musculoskeletal system			
21. Assists patients in family or vocational counseling			
22. Takes x-rays			
23. Processes x-rays			
24. Performs minor surgical procedures			

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14. If additional well-trained allied health personnel were available to perform some of the tasks listed above, would you hire such a person in the next year?

_____ no
_____ yes, full-time
_____ yes, part-time
_____ perhaps
_____ not applicable to my situation

15. How many days of the week did you see patients?_____

16. In how many hospitals do you teach or see patients?_____

17. During an average day, how may trips to different hsopitals do you make for:
    a. patient visits _____
    b. teaching visits _____

18. Listed below are some obstacles which may interfere with greater use of allied health workers in orthopaedic practice. In the delegation of increased responsibility to an allied health worker, how serious of a problem do you think each of these potential obstacles would present?

Check one box on each line.

Potential Obstacle	1 Very Serious	2 Somewhat Serious	3 Not Serious
1. Parents would not accept allied health workers			
2. Doctor-patient relationship would suffer			
3. State medical practice laws			
4. Insurance liability problems			
5. Not feasible financially in solo private practice			
6. Not feasible because of lack of office space			
7. Competent, trained allied health workers not presently available for employment			
8. Job turnover of allied health workers			
9. Supervision of allied health workers			
10. If regular patient load increases to much, "emergency" calls will get out of hand			
11. Other obstacles (please specify)			

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19. Listed below are some statements which describe what *might* happen if Board qualified orthopaedic practitioners made greater use of allied health workers in their practice to carry out the tasks outlined in the previous questions. Which of the statements best expresses your personal opinion of what might generally happen? Check *only one*.

    _____ a. An increase in the number of patients the practitioner serves without change in the quality of service.

    _____ b. An increase in the number of patients the practitioner serves, but with deterioration in the quality of service.

    _____ c. An increase in the number of patients the practitioner serves and an improvement in the quality of service.

_____ d. No change in the number of patients the practitioner serves, but with improvement in the quality of service.

_____ e. No change in the number of patients the practitioner serves, but with deterioration in the quality of service.

_____ f. No change in the number of patients the practitioner serves, or the quality of service.

Comments:

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20. What practices of a social, legal or governmental, medical nature do you feel impose constraints on the practice of orthopaedics and result in reduced efficiency and/or lowering patient care?

21. Do you feel that additional orthopaedic surgeons are needed for the area in which you practice?
Yes _____, No _____, Uncertain _____.
1 2 3

ORTHOPAEDIC PRACTICE

22. Sample an average week of practice in the month January or February 1970. Indicate the number of patients you have seen in each category, even though some patients will appear in all three. 55

	Where Seen			Operation (draws blood)
By Age	*Office*	*Hospital*	*Home*	
Child (birth to 16 years)				
Adults (17 to 60 years)				
Adults (over 60 years)				
By Disease Classification of Patient's Primary Problems				
Trauma				
Degeneration				
Inflammatory				
Infection				
Rhematoid arthritis, etc.				
Congenital				
Developmental-growth distrubance				
Metabolic				
Tumor				
Non-orthopaedic				

APPENDIX II

NUMBER OF ORTHOPEDISTS AND POPULATION BY STATE AND REGION

56/ 57

	Population (1,000's)	Orthopedists (AAOS Members)
NORTHWEST		
Alaska	282	8
Colorado	2,100	77
Idaho	718	17
Montana	694	11
North Dakota	615	15
Oregon	2,032	78
South Dakota	659	6
Utah	1,045	32
Washington	3,402	93
Wyoming	320	6
	11,867	343
SOUTHWEST		
Arizona	1,693	43
California	19,443	777
Nevada	457	15
New Mexico	994	24
	22,587	859
CENTRAL		
Illinois	11,047	190
Indiana	5,118	98
Iowa	2,781	44
Kansas	2,321	43
Kentucky	3,232	51
Michigan	8,766	146
Minnesota	3,700	89
Missouri	2,360	93
Nebraska	1,449	27
Ohio	10,740	205
Wisconsin	4,233	89
	55,747	1,075

	Population (1,000's)	Orthopedists (AAOS Members)
NORTHEAST		
Connecticut	3,000	101
Delaware	540	11
District of Columbia	798	46
Maine	978	20
Maryland	3,756	70
Massachusetts	5,467	174
New Hampshire	717	16
New Jersey	7,148	158
New York	18,321	502
Pennsylvania	11,803	203
Rhode Island	911	30
Vermont	439	11
West Virgina	1,819	28
	55,704	1,370
SOUTH/SOUTHEAST		
Alabama	3,531	49
Arkansas	1,995	26
Florida	6,354	204
Georgia	4,641	78
Louisiana	3,745	83
Mississippi	2,360	26
North Carolina	5,205	98
Oklahoma	2,568	56
South Carolina	2,692	39
Tennessee	3,985	98
Texas	11,187	250
Virginia	4,669	92
	52,933	1,099

VT 019 117

VT 019 117
GADDIS, G. WARREN.
STUDY OF UTILIZATION OF AND PREFERENCE FOR FEDERAL EXCESS PROPERTY PROGRAM AND STATE SURPLUS PROPERTY PROGRAM, 1972.

UTAH STATE BOARD OF EDUCATION, SALT LAKE CITY. RESEARCH DIV.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - NOV72 12P.

DESCRIPTORS - *LAND USE; *FEASIBILITY STUDIES; *LAND ACQUISITION; *STATE PROGRAMS; *FEDERAL PROGRAMS
IDENTIFIERS - *FEDERAL EXCESS PROPERTY PROGRAM; *STATE SURPLUS PROPERTY PROGRAM

ABSTRACT - REPORTED ARE THE FINDINGS OF A STUDY CONDUCTED TO INVESTIGATE THE UTILIZATION OF AND DESIRE FOR THE FEDERAL AND STATE EXCESS PROPERTY PROGRAMS. A TOTAL OF 143 QUESTIONNAIRES WERE DISTRIBUTED TO ALL KNOWN LOCAL PERSONNEL WHO HAD HAD CONTACT WITH AND MADE USE OF EQUIPMENT OBTAINED THROUGH THE FEDERAL EXCESS PROGRAM AND STATE SURPLUS PROGRAM IN ORDER TO COLLECT BASE DATA. OF THOSE SURVEYED, 56 RESPONDED. AN ANALYSIS OF THE FINDINGS REVEALED THAT: (1) THERE WERE DIFFICULTIES INVOLVED IN OBTAINING NEEDED ITEMS THROUGH BOTH SOURCES, (2) THE LARGER DISTRICTS AND INSTITUTIONS, AND THOSE GEOGRAPHICALLY CLOSER TO THE WAREHOUSE HAD SOME ADVANTAGED IN OBTAINING THE BEST ITEMS FROM BOTH SOURCES, (3) THE QUALITY OF ITEMS OBTAINED THROUGH THE FEDERAL EXCESS PROGRAM WAS GENERALLY BETTER, (4) IT WAS EASIER TO MAINTAIN RECORDS ON ITEMS ACQUIRED THROUGH THE STATE PROGRAM, (5) ACCESS TO THE FEDERAL EXCESS PROGRAM RESULTED IN CONSIDERABLE DOLLAR SAVINGS, (6) ACCESS TO FEDERAL PROGRAMS ALLOWED THE ESTABLISHMENT AND CONDUCT OF NEEDED PROGRAMS WHICH WOULD OTHERWISE BE IMPOSSIBLE DUE TO CAPITAL REQUIREMENTS, AND (7) IT WAS DESIRABLE TO MAINTAIN ACCESS TO THE FEDERAL EXCESS PROGRAM. (SN)

DEC 19 1972

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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STUDY OF UTILIZATION OF AND PREFERENCE FOR FEDERAL EXCESS PROPERTY PROGRAM AND STATE SURPLUS PROPERTY PROGRAM, 1972

OFFICE OF UTAH STATE BOARD OF EDUCATION

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Salt Lake City, Utah
November 1972

VT019217

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STUDY OF UTILIZATION OF AND PREFERENCE FOR
FEDERAL EXCESS PROPERTY PROGRAM AND
STATE SURPLUS PROPERTY PROGRAM, 1972

Problem and Procedures

In July, 1972, the Department of Health, Education and Welfare, at the urging of the Office of Management Budget, suspended, at least temporarily, access by the public schools to the Federal Excess Property program. The rationale of the Department of Health, Education and Welfare and the Office of Management Budget was, in part, as described below:

> The rationale for this proposal with respect to excess property was based on a concern that fullest utilization of this valuable asset be made in the public interest. This objective cannot be attained under the current system which allows grantees, as a select group of eligible recipients, a priority to acquire most of the useful and valuable property.
>
> In the Federal Property Act the term "excess property" is defined as property not required by the holding agency for its needs and the discharge of its responsibilities. The term "surplus property" is defined as any excess property not required for the needs and the discharge of responsibilities of all Federal agencies as determined by the Administrator of General Services .... Each executive agency is urged to transfer excess property under its control to other Federal agencies, mixed ownership Government corporations or the District of Columbia government.
>
> Excess property not required for the needs and the discharge of responsibility of all Federal agencies as determined by the GSA Administrator becomes surplus property and is available under the Federal Property Act for donation for use in any State for purposes of Education, public health or civil defense. The Act provides that such property shall be transferred for use within any State to the State agency designated under State law for the purpose of distributing such property within the State.

Eligible donees as listed in the Federal Property Act /Include/ the following:

> a. Tax-supported .... school systems, schools, colleges, universities, schools for the mentally retarded, schools for the physically handicapped ....

b. Other nonprofit .... schools, colleges, universities [etc.].

The surplus property donation program .... has been serving education and public health needs of the States for over twenty years. It is carried out by the States ....

Under GSA authorization institutions which are Federal grantees have been able to compete on a first come, first served basis with Federal agencies for available excess.

The Constitution prohibits the disposal of Federal property except as authorized by the Congress. There is no general authority for the disposal of excess property. On the other hand, Congress has authorized surplus property to be disposed of by abandonment, donation, or sale. Since property in the excess category acquired by grantees continues in Federal ownership it is necessary that adequate inventory controls and accountability systems be maintained on such property as required by the Federal Property Act.

.... Individual colleges, universities, vocational-technical schools and other grantees are competing with each other for available excess. The amount of property each is able to acquire depends in part upon the capability of the individual grantee to have adequate staff to visit excess property generating facilities of the Federal Government in order to examine and claim usable property .... Many of these persons who are engaged in examining the same property for the same purpose are not only duplicating each other's work but are also duplicating the work of the State surplus property agencies whose staff are assigned responsibility for screening property for all public health and education needs.

Removing the priority which the grantees presently enjoy would not be an inequity but would place them on an equal basis to participate with other eligible donees in the surplus property donation program .... They would continue to receive this property with the added advantage that it would be transferred to their ownership under the donable property program and eliminate the necessity for costly inventory controls and accountability systems.*

The Research Coordinating Unit was asked to conduct a study in the local educational agencies of the utilization of and feelings about the Federal Excess Property program. It was the feeling of the staff of the Vocational Education Division of the Utah State Board of Education

*Office of Management and Budget, "Use of Federal Supply Sources by Federal Grantees." Office of Management and Budget; Washington, D.C., July 1972. (Position paper sent by request to Sherman P. Lloyd, House of Representatives).

that suspension of access to Federal excess property would possibly be very detrimental to the development and expansion of many needed vocational programs that were either planned or operating in the State; without the Federal Excess Property program the State Surplus Property program would have to be relied on for acquisition of many kinds of expensive equipment and supplies for vocational programs. If this feeling is correct then it would be desirable to have available data that could be used in urging that the order be rescinded.

Subsequently, staff of the Research Coordinating Unit developed a questionnaire, (Attachment 1), which was mailed to all local personnel (secondary and post-secondary) who it was known (or suspected) had had contact with and made use of equipment obtained through both the Federal Excess program and the State Surplus program. A brief summary of conclusions derived from the data is included on page 6. Immediately below is a tabulation of responses to the questionnaire.

Responses to Questionnaire

Total surveyed - 143
Total responses - 56 (39%)

Item number

1,2 Familiar with F.E.P.* and S.S.P.:**

FEP	95%	5%
SSP	97%	3%
	yes	no

3,4 Have used F.E.P. and S.S.P.:

FEP	93%	7%
SSP	100%	0
	yes	no

*F.E.P.=Federal Excess Property program.
**S.S.P.=State Surplus Property program.

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5. Have used F.E.P. compared to S.S.P.:

much more	more	the same	less	much less
25%	32%	14%	25%	5%

6. Difficulty of obtaining specific items through F.E.P.:

very easy	easy	difficult	very difficult
7%	34%	50%	9%

7. Difficulty of obtaining specific items through S.S.P.:

very easy	easy	difficult	very difficult
2%	34%	55%	9%

8,9,12 Difficulty of obtaining items through F.E.P. compared to S.S.P.:

	much more difficult	more difficult	the same	easier	much easier
personnel	2%	16%	63%	16%	2%
procedures	4%	23%	55%	14%	4%
delivery (or pick up)	2%	13%	63%	20%	4%

Respondent Comments

Need other than first come, first served; not fair to distant and/or small districts; if other than first come, first served, then S.S.P. best source (mentioned 10 times).
S.S.P. more complete line (mentioned 2 times).
Immediate delivery difficult, either program.
"Strings" with F.E.P. too rigid (mentioned 2 times)
Distance of many LEA's from warehouse creates inequities (mentioned 12 times).
Have lost reserved ("tagged") items at S.S.P. while awaiting clearance.
F.E.P. items "signed out" immediately; long wait with S.S.P. (mentioned 4 times).
No action on "want lists" to S.S.P.
S.S.P. items "signed out" immediately (mentioned 2 times).
"Time schedule" for F.E.P. "more restrictive" than S.S.P. (mentioned 2 times).
F.E.P. staff made greater effort to provide service (mentioned 2 times).
Notified when items available through F.E.P.: F.E.P. does not upset pre-planned budget.
"Placed an order, but never heard anymore."

10. Distribution of items through F.E.P. is equitable:

yes	no
53%	47%

Respondent Comments

"But better than S.S.P." (mentioned 2 times).
BYU and Manpower get more (mentioned 3 times).
Some LEA's get excessive allocations from F.E.P. (mentioned 3 times).
"Special customers" get choice items in both F.E.P. and S.S.P.
State specialist favor special projects rather than State-wide distribution.
Some items not given wide publicity (mentioned 2 times).
Less favoritism with F.E.P. than S.S.P.
Not based enough on needs -- i.e., number students, number programs
(See also some comments in above items).

11. Quality of items obtained through S.S.P. compared to F.E.P.

much better	better	the same	not as good	much worse
4%	7%	29%	57%	4%

13. Ease of maintaining records of items obtained through F.E.P.:

quite easy	fairly easy	fairly difficult	quite difficult
20%	64%	15%	2%

14. Ease of maintaining records on items obtained through S.S.P.:

quite easy	fairly easy	fairly difficult	quite difficult
28%	62%	8%	2%

15. Difficulty of maintaining records on items obtained through S.S.P. compared to F.E.P.:

much more difficult	more difficult	the same	easier	much easier
0	8%	55%	30%	8%

Respondent Comments

No inventory required with S.S.P.
Problems reading S.S.P. invoice carbons (mentioned 6 times).
(See also some comments in above items).

16. Favor continuing F.E.P.:

yes	87%
no	4%
don't care	9%

Respondent Comments

There is competition between S.S.P. and F.E.P., and this is not good.
Prefer the S.S.P.
Warning on arrival of F.E.P. items should be given.
F.E.P. has made possible many very expensive programs that could not otherwise have been carried out.
F.E.P. items are very superior.
F.E.P. saves thousands of dollars a year.
Don't need to be there with F.E.P.

Summary of Data

It is evident that, although there were differences of opinion with regard to some aspects of both programs, the bulk of respondents highly favored the continuation of vocational education access to the Federal Excess Property program. Specifically, it was felt that:

1) there were difficulties involved in obtaining needed items through both sources, but that one did not present appreciably greater difficulties than the other;

2) the larger districts and institutions, and those geographically closer to the warehouse, had somewhat of an "upper hand" in obtaining the "best" items from both sources;

3) the quality of items obtained through the Federal Excess program was generally better;

4) it was somewhat easier to maintain records on items acquired through the State Surplus program, but that this was not cause to decline use of items obtainable through the Federal Excess program;

5) access to the Federal Excess program resulted in considerable dollar savings to the using institutions and districts;

6) access to the Federal Excess programs allowed the establishment and conduct of several needed vocational programs that would not otherwise have been possible due to the large capital outlays required for expensive equipment; and,

7) it was desirable to maintain access to the Federal Excess Property program.

Attachment 1

QUESTIONNAIRE

Survey of Federal Excess compared to State Surplus Property

The items of this questionnaire are intended to elicit your feelings about the Federal Excess Property program compared to the State Surplus Property Program. Please respond as indicated in the examples below. Please read each item completely before responding.

The information you provide will be held confidential and only reported in the aggregate from all respondents. We would appreciate the return of this completed questionnaire by October 31, 1972.

Thank you for your information and cooperation.

.....

Directions: Please circle the word or phrase in each item which best represents your opinion or experience.

Examples: A. I (am)
am not an educator.

B. I find driving in snow much easier
easier
the same in effort
(harder)
much harder than driving on ice.

.....

1. I am
am not familiar with the Federal Excess Property program.

2. I am
am not familiar with the State Surplus Property program.

3. I (i.e., the district, institution) have
have not made use of
the Federal Excess Property Program by obtaining some quantity of equipment, supplies, materials, etc. from the State Warehouse, Hill AFB, Tooele Army Depot, or other source.

*** If your answer to #3 is negative, stop, return the questionnaire.

4. I (i.e., the district, institution) have
have not made use of
the State Surplus Property Program by obtaining some quantity of equipment, supplies, materials, etc. from the State Warehouse.

5. I made much more
   more
   the same
   less
   much less use of the Federal Excess Property Program last year than of the State Surplus Property program.

6. I found it very easy
   easy
   difficult
   very difficult to obtain specific supplies, materials, etc. that I needed through the Federal Excess Property program.

7. I found it very easy
   easy
   difficult
   very difficult to obtain specific equipment, supplies materials, etc. that I needed through the State Surplus Property Program.

8. In terms of the personnel we dealt with, I think it was probably
   much more difficult
   more difficult
   the same in effort
   easier
   much easier to obtain equipment, supplies, materials, etc. through the State Surplus Property Program than through the Federal Excess Property Program.

   Please explain: _____

   _____

   _____

9. In terms of the procedures (red tape, papers to sign, time, etc.) it is much more difficult
   more difficult
   the same in effort
   easier
   much easier to obtain equipment, supplies, materials, etc. through the State Surplus Property Program than through the Federal Excess Property Program.

   Please explain: _____

   _____

   _____

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10. In general, I feel that distribution of equipment, supplies, materials, etc. obtainable through the Federal Excess Property Program is
is not done
equitably among all districts, schools, and institutions. (i.e., I think favoritism is shown by someone such that some districts or institutions regularly get more and/or better equipment, supplies, etc. than others).

Please explain: _____

_____

_____

11. Considering all the equipment, supplies, etc., I (i.e., the district institution, etc.) acquired in the last year, that obtained through the State Surplus Property Program was much better than
better than
the same as
not as good as
much worse than that obtained through the Federal Excess Property Program. (Age, condition, usability, etc.)

12. It was generally much easier
easier
no different in effort
more difficult
much more difficult to pick up (or have delivered) the equipment, supplies, etc. obtained from the State Surplus Property Program than that obtained through the Federal Excess Property Program.

Please explain: _____

_____

_____

13. I found it to be quite easy
fairly easy
fairly difficult
very difficult to establish and maintain records of the equipment I obtained through the Federal Excess Property Program.

If difficult, please explain: _____

_____

_____

14. I found it to be quite easy
fairly easy
fairly difficult
very difficult to establish and maintain records of the equipment I obtained through the State Surplus Property Program.

If difficult, please explain: _____

_____

_____

15. In general, it is much more difficult
more difficult
the same effort
easier
much easier to establish and maintain records of equipment, materials, etc. acquired through the State Surplus Property Program than through the Federal Excess Property Program.

Please explain the difference, if one exists: _____

_____

_____

16. I am in favor of
am not in favor of
am indifferent to the continuation of the Federal Excess Property Program at this time.

.....

We are interested in any further comments you may want to make about the two programs.

_____

_____

_____

.....

Thank you for your assistance.

VT 019 126

VT 019 126
PROBLEMS OF TRAINING AT DIFFERENT LEVELS IN THE METAL TRADES WITH PARTICULAR REFERENCE TO DEVELOPING COUNTRIES.

INTERNATIONAL LABOUR OFFICE, GENEVA (SWITZERLAND).
MF AVAILABLE IN VT-ERIC SET.
R-3
PUB DATE - 70 56P. REPORT PREPARED AS AGENDA ITEM FOR SESSION OF THE METAL TRADES COMMITTEE. INTERNATIONAL LABOUR ORGANISATION (9TH, GENEVA, SWITZERLAND, 1970).
DESCRIPTORS - *CONFERENCE REPORTS; INTERNATIONAL ORGANIZATIONS; LABOR UNIONS; *METAL WORKING OCCUPATIONS; *DEVELOPING NATIONS; LABOR PROBLEMS; *JOB TRAINING
IDENTIFIERS - *METAL TRADES TRAINING

ABSTRACT - THIS 5-CHAPTER REPORT SUBMITTED TO THE NINTH SESSION OF THE METAL TRADES COMMITTEE OF THE INTERNATIONAL LABOUR ORGANIZATION IS COMPOSED IN PART OF RESPONSES AND RECOMMENDATIONS OBTAINED FROM OTHER METAL WORKS ORGANIZATIONS AND AUTHORITIES IN ADDITION TO THE TECHNIQUES AND FINDINGS RESULTING FROM TECHNICAL COOPERATIVE PROJECTS WHOSE EFFORTS WERE FOCUSED PRIMARILY ON THE DEVELOPMENT OF TRAINING FOR METAL TRADES. CHAPTERS INCLUDED ARE: (1) METAL TRADES TRAINING IN A CHANGING WORLD (A DISCUSSION OF TRENDS IN METAL TRADES TRAINING AS WELL AS FACTORS AFFECTING TRAINING IN DEVELOPING COUNTRIES), (2) TRAINING AT VARIOUS LEVELS (TRAINING NECESSARY FOR THE DIFFERENT JOB TITLES AND/OR POSITIONS, (3) TRAINING TECHNOLOGY AND TRAINING PROGRAMS (TRENDS AND METHODS INVOLVED IN THE ORGANIZATION OF TRAINING PROGRAMS), AND (4) TRAINING IN DEVELOPING COUNTRIES. A TABLE CONTAINING AN ANALYSIS OF METAL TRADES OCCUPATIONS SUPPLEMENTS THE TEXT. (SN)

REPORT III

International Labour Organisation

METAL TRADES COMMITTEE

NINTH SESSION

GENEVA, 1970

Problems of Training at Different Levels in the Metal Trades, with Particular Reference to Developing Countries

Third Item on the Agenda

Report prepared by the International Labour Office

GENEVA
International Labour Office
1970

VTC19126
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REPORT III

International Labour Organisation

Metal Trades Committee

Ninth Session

Geneva, 1970

Problems of Training at Different Levels in the Metal Trades with Particular Reference to Developing Countries

Third Item on the Agenda

Report Prepared by the International Labour Office

Geneva,
International Labour Office
1970

1590

The designations employed, which are in conformity with United Nations practice, and the presentation of the material in this publication, do not imply the expression of any opinion whatsoever on the part of the International Labour Office concerning the legal status of any country or territory or of its authorities, or concerning the delimitation of its frontiers.

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INTRODUCTION

At its Third Session (Geneva, 1949) the Metal Trades Committee of the International Labour Organisation examined the state of training in metalworking industries on the basis of a report submitted by the Office.[1] Acting on a proposal of the Metal Trades Committee put forward at its Eighth Session the Governing Body decided that, in view of the lapse of time, a new review of vocational training developments should be included in the agenda of the Ninth Session of the Committee.

The matter was discussed at the 172nd (May 1968) and 173rd (November 1968) Sessions of the Governing Body and it was decided that the report to be submitted to the Ninth Session of the Committee should deal with problems of training at different levels in the metal trades with particular reference to developing countries. It is on this basis that the present report has been prepared. It analyses the trends and developments which have become apparent since 1949, with particular attention to the problems encountered in African, Asian and Latin American countries.

The report takes account of information received from the relevant organisations and authorities as well as from many undertakings. It is also based on documentation assembled by the Office, including reports on technical co-operation projects concerned with training for the metal trades.

Little has yet been written about the special problems which need to be tackled by developing countries if the system of training is to serve as an efficient tool in the establishment and expansion of metal trades industries in these countries. The report is therefore largely built on observations made in the implementation of projects of technical co-operation relating to the development and utilisation of human resources.

The report is divided into five chapters.

Chapter I reviews the general trends in metal trades training which have become apparent over the past twenty years and the special factors which developing countries need to take into account in improving the current patterns of training for these trades.

Chapter II deals with training for the various levels of the skill hierarchy. It pays special attention to ways in which training is organised in developing countries and to means of promoting training action in the intermediate and traditional sectors of the metalworking industries.

Chapter III discusses new trends in training organisation and methods as well as syllabus construction and methodology problems in the developing world.

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[1] Metal Trades Committee, Third Session, Report II: Vocational Training and Promotion in the Metal Trades, ILO, Geneva, 1949, 164 pp.

Chapter IV deals with some aspects of training administration of particular significance for developing countries, including employers' and workers' participation in training for the metal trades.

The report concludes with a list of a number of points suggested for discussion by the Committee.

CHAPTER I

METAL TRADES TRAINING IN A CHANGING WORLD

General Tendencies in Metal Trades Training

During the last twenty years the metal industries have undergone considerable change and it seems certain that this process will continue and be intensified in the years to come. New working methods have been introduced, new materials adopted. The whole structure of the metal industries is evolving. New hierarchical and occupational structures have already emerged and are likely to continue to undergo change.

Metal trades industries have been established or expanded in countries which previously had little or no manufacturing industry in this field of economic activity. In consequence it has become even more important than in the past for staff at all levels in the metal trades to receive sound training. New training patterns need to be developed and old training systems revised and reinforced. This has been recognised generally, and has led to a marked intensification of efforts to make training for the metal trades both more efficient and available on a more extensive scale and a more permanent basis to metal trades personnel.

These efforts are reflected in a large number of general trends in metal trades training which affect virtually all aspects of training for these trades. They involve action on the part of public authorities as well as employers and workers and their organisations. Briefly, they have led to a considerable expansion in the total volume of training, to experimentation with and the introduction of organisational changes entailing revision of traditional concepts of trade and occupation, to adjustment of the period required for complete training to new occupational requirements and to changes in the form of training. They have also involved technical and pedagogical improvement of the actual training process, and have made necessary a reinforcement of the administrative structure of the public and quasi-public bodies concerned with the organisation and control of training action within undertakings. These developments are in line with general trends in vocational training for most industries. But because of the central role of the metal industries and the need for skilled mechanics, electricians and other staff trained in and for the metal trades in other industries as well, the metal industries have often acted as pace setters and guides in the development of new training patterns in both industrialised and developing countries.

There is also a marked trend towards the development of schemes combining institutional and in-plant training with a view to each of these two components giving that part of the training for which it is best suited.

Recognition that, when requirements on the job may be expected to change rapidly, initial training - that is, training given when about to start a working career - is often not enough, has led to a

rapid and intensive development of schemes of further training of different kinds. These schemes are closely co-ordinated with programmes of initial training. The principle of life-long education and training has in any case been accepted.

The preparation of syllabi and programmes has also become more systematic. The principles have been accepted that syllabi should be based on thorough trade analyses so as to ensure that the training corresponds to the skills actually required in employment; that the syllabi themselves should be prepared on a systematic basis, taking account of pedagogical requirements; and that all training programmes should include both practical training and related theoretical instruction. However, a good deal remains to be done to translate acceptance of these three principles into generalised action.

Efforts towards achieving maximum efficiency have also been directed towards improving teaching methods. There have been widespread experimentation and research with the aim of working out the teaching methods which are most appropriate for particular circumstances - for a particular trade, for a specific category of trainee, for a particular country, etc. This increased interest in methods has been accompanied by much greater use of training aids of various kinds.

Where out-of-school training for the metal trades, along with training for other branches of economic activity, was not already under the general control of some national authority, steps have often been taken to place it under such control and to integrate it more closely into the over-all training system. In general it is accordingly more subject than it used to be to technical supervision and control and to standards prescribed at the national level. Conversely, guidance and assistance in the organisation of out-of-school training are more generally available from national training authorities than before.

The metal industries are doing more today than in the past to develop their own training and to encourage new and existing institutions active in this field. Individual employers or groups of employers have taken steps to study, experiment with, organise or reorganise training for their workforce and to participate actively in training action by government or individual training institutions.

The average trainee himself may also have changed quite considerably. In this respect there are a number of sometimes conflicting trends which may make it necessary to review the organisation of training at a particular time. On the one hand, the prolongation of compulsory schooling and the improvement of educational methods may mean that the trainee has reached a higher standard of general education than in the past. On the other hand, the various measures taken to facilitate continuation of education to a higher level, beyond compulsory schooling, have often resulted in a lowering of the over-all standard of trainees entering the metal trades: the more able youngsters are no longer interested in training for worker (operative) level in the metal trades. However, the trainee's education has usually been less academic in character than before; it has often accustomed him to work in a team, to work out

solutions to problems by himself or as a member of a group; above all, it has generally provided him with some technical initiation and orientation which help in the choice of a career or line of training.

There has been a general move to make special arrangements to enable people who would not otherwise have access to training to benefit from it. Such arrangements have involved two types of action: financial and organisational. In some countries governments provide study grants or loans for trainees in schools as well as for those in apprenticeship programmes; trainee allowances paid by employers have also been raised considerably in many countries in the past few years; it has become common practice to organise related instruction in the form of day-release or block-release courses and to discontinue evening classes as part of initial training. Special arrangements have been made - by such means as radio or TV programmes, mobile instruction units and correspondence courses - to provide adequate training opportunities for persons living in isolated areas to supplement their training on the job. Correspondence courses, in particular, have played an important role in the expansion of technician training.

In the past, primary attention in training for the metal trades has been devoted to the skilled worker level. There is now much greater interest in providing training for other levels, for semi-skilled workers and technicians, for instance, and for other categories such as supervisors and training staff. The training for the latter two, in particular, has become more comprehensive as regards both the content of training and its duration.

The above trends have been accompanied by the development of far more systematic and comprehensive research into the procedures and practices of vocational training for the metal trades. Ideas accepted unquestioningly in the past have been re-examined critically by public authorities, employers' and workers' organisations and by institutions concerned with manpower development, education and training.

Factors Affecting Metal Trades Training in Developing Countries

The general trends in metal trades training outlined above are apparent to quite a large extent in most developing countries. In fact the metal industries in many of these countries have a nucleus of training arrangements which are extremely efficient and systematic. The substantial proportion of requests by developing countries for technical co-operation in the field of training which involve the metal trades is evidence in itself of the importance they attach to these trades. Of twenty-three Special Fund aided projects which began in 1969 and for which the ILO is Executing Agency, all but five had a substantial metal trades component. Practically all developing countries have taken steps over the past twenty years to reinforce the network of training institutions serving the metal trades and, particularly in recent years, have launched programmes for the improvement of training within metal trades undertakings.

However these arrangements usually cater for only a small proportion of the metal trades in the countries concerned. In many cases difficulties have been encountered and the results expected have not been achieved as the special factors affecting metal trades training in developing countries and the particular needs of a country which wants to build a new industry have not always been taken into account.

To begin with, industrialised countries already have comprehensive metal trades industries with a considerable number of large, medium-sized and small undertakings working at a high level of efficiency. Workers, supervisors and other technical staff in these industries have a high degree of occupational mobility. There is an automatic inter-play between formalised training in schools or in undertakings and training in employment. Facilities for updating, upgrading and retraining are available through courses in vocational and technical schools, and training is often provided by the manufacturers or suppliers of new equipment, tools and materials. The undertakings are largely innovatory, often have their own research departments or collaborate closely with research institutions and convey knowledge about new methods and products on a continuing basis to their technical staff. Machines, tools and products are often modified and retraining on the job is virtually a daily occurrence. National and international competition makes it necessary to achieve a high annual rate of increase in productivity and this in turn leads to a strongly developed training consciousness throughout firms, regardless of their size.

Such conditions exist in only a few developing countries in which a comprehensive metal trades industry has already been established, and, even then, almost exclusively in the metropolitan areas. In all other areas, and on the whole in most developing countries, it is necessary for the training system - if it is to promote the growth of new industry - to make up for the deficiencies in various ways.

In developing countries there is often little inter-play and mobility between the large undertakings in the modern sector, the medium-sized and small undertakings in the intermediate sector and the marginal service undertakings in the low productivity sector. Each of these sectors has its own recruitment standards and training patterns. There is usually little if any "spill-over" from training in the modern sector into the intermediate and low productivity sectors.

There seems in many cases to be a need for a more concerted and global approach to training for the metal trades within the framework of efforts to modernise and develop the metal working industries and the metal trades in general. It is evident that even the modern sector of these industries in many - perhaps most - developing countries is imitative rather than inventive and innovatory. In this way it differs from its counterparts in the various highly industrialised countries. But if real industrialisation is to be achieved this situation clearly needs to be changed; the industry must become more self-reliant, develop its own products, methods and organisation, and raise its productivity in order to become internationally competitive. To do this one of the first problems to tackle is the shortage of technically qualified personnel at all levels of the occupational structure.

This report is not concerned with the graduate engineer level. But action towards improving the quality of staff below this level will not be reflected in the desirable higher quality work and increased productivity unless sufficient senior staff of the necessary calibre are available. However, there is a very serious shortage in developing countries of competent personnel at this level - particularly of staff for product development, production engineering, design and planning activities which are so important for the metal working and other industries involving the metal trades. Action to improve the quality of staff below graduate engineer level will therefore need to be paralleled by corresponding action for the higher categories.

The existing skill structure in the metal trades in developing countries may be briefly described as follows. In the modern sector - in both large and medium-sized undertakings - workers, supervisors and other technical staff are normally able to carry out the same operations and functions and use the same equipment, materials and procedures as those applied in comparable work in industrialised countries. Products and procedures may have been designed in and directly transferred from industrial countries. The recruitment levels for skilled workers and technicians are normally similar to those required by undertakings in industrial countries. Apprenticeship and other initial training programmes run within these undertakings closely resemble those applied in similar plants abroad. The personnel structure, however, may differ; in most metal working plants in the developing countries the cadre of technicians is less well developed; in particular, there are fewer research and development staff, designers, planners, production engineers and other technicians. For this reason staff mobility and opportunities for further training tend to be much more limited than in the industrialised countries.

The intermediate sector is mostly composed of small and medium-sized firms, many of which have grown up spontaneously within the country concerned. The products may be copied from industrialised countries. They are usually produced on older and less specialised machines, the work methods and organisation have probably been developed empirically. Most of the plants in this sector are owner-operated, with a small number of intermediate technical staff and a few supervisors who have come up from the ranks of the workers. The skilled workers normally perform a wide range of operations and consequently need broad skills; they may have had formal training but many of them have just picked up their skills on the job. The majority of the employers are labourers and specialised workers with a narrow range of skills who have had little or no systematic training. Recruitment normally takes place at a lower educational level than in the modern sector.

The traditional sector - the artisans in manufacturing and servicing trades in urban areas, rural craftsmen, etc. - constitute a third category. Emphasis is on manual work using chiefly hand tools and local materials. The working methods are traditional and frequently archaic. Many trainees enter the trade at an extremely early age and their training follows age-old artisan apprenticeship traditions. Recruitment is usually done on a personal acquaintance basis without regard to educational achievement level. Because of their generally low educational level theapprentices are normally not accepted in classes for related theoretical instruction and consequently do not systematically learn any trade theory.

The situations described above are not static. In many developing countries they are changing rapidly as a result of pressures from educational improvement and management initiative. However, spontaneous development and improvements of this kind may not be sufficient to ensure a rapid and balanced expansion of the metal industries in most developing countries. The principal aim of action to rationalise, improve and expand training for the metal trades must therefore be to reinforce the trend of change by improving the skill structure simultaneously at all three levels of activity - since development in one sector only will affect the other two adversely - and the approach to the reorganisation and expansion of training for the metal trades in the developing countries must therefore be three pronged.

The extent to which the different needs of the three sectors are taken into account in the organisation of training varies between countries. Generally speaking, most governments have concentrated training action primarily on the modern sector. Although the intermediate sector employs far greater numbers and is usually less able to cater for its own training needs than the large and medium-sized firms in the modern sector, much less attention has usually been given to it. Few developing countries have made any systematic attempts to tackle the training problems involved in the modernisation of the traditional sector of the metal trades.

A few general factors influencing all training and education activities in developing countries might usefully be touched on briefly. As already indicated, many of the existing patterns of training have been modelled on those used in industrialised countries; all too few have been properly adapted to local conditions. They usually do not take into account, for instance, the fact that workers, supervisors and technicians in developing countries have far fewer opportunities for learning about modern methods of production and maintenance and about new machines, tools and materials, or for receiving feed-back from research and product development in the undertakings. This is true of all three sectors. In the modern sector, the communication lines from the inventive and innovating agents in the industrialised countries to the production staff in the developing countries are long and sometimes ineffective. The intermediate sector has little or no contact at all with new developments and trends within their particular field of work. In the traditional sector such outside influences are few and haphazard.

Problems arise from the usually lower level of general education of trainees in developing countries by comparison with those in industrialised countries. There is still a good deal of illiteracy or semi-literacy. Those who have been to school for a reasonable number of years have often received an education which is too academic in character and lacking in any technical orientation or work initiation.

The training problems raised by this over-academic education are all the more serious in the developing countries because many children grow up without opportunities for acquiring what may be called a technical background and without contacts with regular wage-earning employment in industry. They may therefore have no understanding of even elementary technical concepts or any idea of work discipline in the modern industrial sense. A study in training literates and semi-literates in African countries points out some of

the basic problems encountered: people find it extremely difficult to relate the image in a picture or drawing to the object it represents; they lack comprehension of the concepts of time and measurement and are consequently unable to grasp the idea of productivity.[1]

Although prejudice against manual work is not unknown in industrialised countries, it is far more acute in developing ones and creates a real problem as regards the availability of good candidates for training for work in industry. Those with even only a few years of general education, tend not to be interested in taking up jobs involving manual work. The reserve of potential trainees is likely to consist of the less educated and the poorer strata of society.

The tradition-bound nature of life at this level of the society in many developing countries also constitutes an obstacle to attempts at rationalising training patterns. There tends to be, in these societies, a resistance to change which reduces the impact of training as a means of modernisation.

Many developing countries have difficult communication problems to overcome. Engineers, supervisors and workers may speak different languages or dialects and have to communicate with each other in what is in effect a foreign tongue. Vocational and technical teachers frequently have to teach in a foreign language - which may be the official one in the country but is nevertheless insufficiently understood by the average trainee. The technical terminology, textbooks and other teaching aids may not exist in a language fully understood by the trainees. At the same time, those who have the linguistic qualifications required may, for reasons outlined above, not be interested in taking up training as an operator or even as a skilled worker in industry.

A general shortage of competent administrative and technical personnel in developing countries, including supervisors and skilled workers, is an additional complication making it difficult for training institutions to recruit adequately trained staff. The few qualified and experienced technicians, supervisors and skilled workers employed in the plants are already in short supply for production work, and managements may be reluctant to detach them for running training programmes. These problems exist in industrialised countries but are far less acute. They are most serious problems in developing countries, particularly in those in which a large proportion of the management and technical staff, even down to the skilled worker level, have been or are expatriates.

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[1] C. Marguerez, La Promotion technique du travailleur analphabète, Paris, Editions Eyrolles et Editions d'organisation; Collections Languages de l'Entreprise, 1966, 158 pp.

CHAPTER II

TRAINING AT VARIOUS LEVELS

Vocational Orientation, Guidance and Selection for Training

Vocational orientation, guidance and selection for training have become more comprehensive and systematic in recent years. One of the most important developments with respect to vocational orientation has been the greatly increased provision for a child's education to include opportunities over a period of years for gaining information about and becoming familiar with the implications of possible career choices. The school programme itself gives him an opportunity to try his hand at various types of manual skill; the instruction he receives in such subjects as the sciences is often technically oriented; he has opportunities to visit undertakings and, in some countries to work in them for brief periods in order to learn about the nature of the work and the conditions in which it is carried out. Prevocational courses or streams are also organised for vocational guidance and orientation purposes. The emphasis throughout is on enabling young people to choose a line of training and type of work in which they should be able to do well and gain satisfaction.

There has also been considerable development and expansion of guidance facilities for adults who now, in industrialised countries, usually have access to vocational guidance services at various stages in their active working career.

Much research and experimentation has been carried out latterly in these three fields. The aim is to ensure that the best tools are used for the particular purpose - for instance, than an aptitude test does in fact measure the ability it sets out to measure in relation to an occupational goal.

Neither vocational orientation and guidance nor selection for training is organised to the same extent in developing countries. However, widespread discontent with the traditionally theoretical bias and rote learning methods in education in developing countries has led to a number of educational reform proposals. In general, these proposals cover a multitude of aspects such as changing school curricula so as to place increased emphasis on experimental sciences, including basic polytechnical training and education as part of the normal education process of children and adolescents, and giving young people a better orientation about the contribution they may be expected to make to the social and economic development of their countries. In many of these proposals emphasis is also laid on introducing into the syllabi subjects of particular importance for the development of the metal trades: the construction, repair and maintenance of basic mechanical implements, elementary technology in engineering and electricity, rural mechanisation as a means of improving agricultural production, motor mechanics and the use of other mechanical implements in the improvement of other basic industries in the developing countries.

Attempts are being made in many countries, among them India, Tunisia and the UAR, to provide prevocational training for early school leavers and out-of-school youth - courses which feature instruction in metal-working skills so as to facilitate the absorption of these young people into existing training schemes or into employment in metal-working plants.

Many governments have established services for providing vocational orientation and guidance for school children - and in a few countries for adults also. Some have appointed trained careers masters in primary and secondary schools and made other provisions for arranging aptitude testing and occupational guidance for children and young people before they leave school. Although in this manner a start has been made, these services are generally not yet in a position to cater for all those who could benefit from them.

As regards selection for training, it is quite common for metal-working firms in the modern sector to screen applicants by means of interviews, tests of level of education and a medical examination. Some give aptitude tests as well. Candidates who pass this preliminary hurdle are frequently then required to undergo a probationary period which may range from a few weeks in adult training to up to six months in apprenticeship.

One of the problems encountered in both guidance and selection in developing countries is the lack of tests - of intelligence and aptitude - suitable for use locally. Tests and recruitment standards worked out for industrial societies have sometimes been used but have often not been very successful. Where this is so, it is unlikely that the persons described will be prepared to stay in the training programme, let alone in the work to which it is intended to lead.

A large firm in India manufacturing electrical machinery and supplies, a subsidiary of a European firm, met difficulties of this kind. It initially set its educational standards for admission to training at a high level and recruited from relatively high social strata. Practically all the trainees accepted, however, left the company during or shortly after completing the training. They were not interested in work in the factory. They had gone into the course in the hopes that acceptance as a trainee for a skilled worker job would give them an opportunity to switch to a different kind of work and career in the undertaking later on.

Recognising this, the firm drastically lowered the admission standards and took steps to ensure that those selected came from medium to lower income groups since it was felt that recruits from these strata of society were likely to be more interested in staying with the firm as workers in the factory. The selection process was also made more comprehensive and systematic, aptitude tests were applied and the training syllabi were adjusted to the new admission level. Special courses, chiefly in English and trade mathematics, were added to the programme to raise the trainees' level of general education. The cumulative result of these measures was that the firm achieved a substantial reduction in employee wastage (some 60 per cent) without having to compromise with quality of training.

But firms which organise comprehensive selection procedures are not very numerous and arrangements for selection in the traditional sector, and sometimes in the intermediate sector also, are based largely on family relationships, personal recommendations or influence. In the traditional sector, in particular, little attention may be paid to educational achievement.

A number of developing countries which have established national services for vocational training have, however, taken steps either to prepare their own guidance and selection tests for vocational training in the metal trades or to adapt existing batteries of tests for their own use. The National Apprenticeship Service (Servicio Nacional de Aprendizaje - SENA) in Colombia[1] and the National Apprenticeship Institute (Instituto Nacional de Aprendizaje - INA) in Costa Rica[2] are two examples of services which have thus introduced batteries of tests modified in accordance with local requirements to assist undertakings in the selection of apprentices. Many of the projects for the organisation of vocational training run with ILO technical co-operation in African countries include specialists in trade testing and trade examinations in their teams of experts. The trend is clear: the developing countries generally are making concerted efforts to come to grips with their recruitment and selection problems.

Training for Worker (Operator) Level

Initial Training

The four main traditional patterns of initial training for workers above unskilled level - training in vocational schools, apprenticeship, informal training on the job and accelerated training for adults - are all undergoing rapid change. More and more schools are making arrangements for their trainees to spend short practice periods in industry, sometimes even relatively long periods. Apprenticeship, which once used to be organised entirely on the job, is now increasingly made up of systematic training off the job supplemented by periods of work experience in the shop. Training for adults is broadened by combining basic training in specialised centres with supervised further training on the job. Other forms of in-plant training, previously given entirely on the job, are being made more systematic and tend to include some basic initiation in vestibule or training bay. Steps are commonly taken to ensure that trainees in the workshop are placed under the supervision of specially trained supervisor/instructors or lead workers.

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[1] See J. Roch, "Estudio de validación de una adaptación del 'General Aptitude Tests Battery'", Boletín Técnico de la Sección de Selección y Orientación, Instituto Nacional de Aprendizaje, San José, No. 1, June 1969.

[2] See J. Roch, Por que un servicio de selección y orientación un organismo de formación profesional como el INA, San José, Seminario Centro Americana sobre Formación Profesional copatrocinado por CINTERFOR/OIT y el Instituto Nacional de Aprendizaje de Costa Rica, 13-18 October 1969, (Document CINTERFOR/INA/066/DOCTRAB/5).

Vocational schools: Most developing countries have vocational or technical schools in which a variety of metal trades are taught. These schools are normally under the authority of the Ministry of Education and are designed to train skilled workers. The courses usually include mechanical and electrical fitting, turning and milling, sheet metalwork, pipe fitting, boilermaking and welding, automotive repair. Courses requiring a high level of instruction and special equipment, such as training for tool and die making and precision and instrument mechanics, are less common but are increasing in number.

Generally these courses are accessible only to young people who have completed at least primary education, the duration of which in developing countries may range from four to eight years. The schools are generally located in urban areas. Most courses in metal trades subjects last between two and three years full time; evening courses may be provided, but they are rarer.

Available evidence suggests that in many cases these vocational schools do not contribute very much to the provision of a skilled workforce in the metal trades.

In the first place, there are not usually a great number of them. Those which do exist generally have only a limited capacity, and even this capacity if often not fully used. This is due to a number of reasons: shortage of candidates qualified for admission, heavy drop-out rates among those admitted and lack of adaptation of the courses to requirements in employment.

There is a shortage of good candidates because, of the relatively small proportion of young people who complete primary education and want to go on to secondary school, the majority try to obtain a place in a general secondary school, because of its higher prestige and the non-manual occupations it is expected to lead to. A vocational school is thus generally only second choice among those eligible for admission. Moreover, vocational schools seldom give access to education or training at a higher level, either general or technical, and this, in itself, makes them less attractive to young people with ambition.

Wastage occurs both during and after the courses. The families of boys who are interested in work in the metal trades are often under financial pressures. As a result, the boys tend to drop out of the courses as soon as they have acquired some basic skills and to take jobs which will give them even a minimum wage.

Drop-out from the trade after completing a worker-level course in a vocational school occurs in two ways. Youngsters who can afford to do so seek to qualify for entry into technician training. Others try to get into non-manual work as soon as an opportunity arises. This can be relatively easy in countries with a scarcity of people with any kind of education or training.

Vocational school courses' lack of adaptation to requirements in employment is both quantitative and qualitative. On the quantitative side, the trades for which training is provided and the numbers for which there is provision in each trade section do not necessarily correspond with actual requirements for skilled workers in the area. Detailed and reliable information on these requirements is often not available either to the educational

authorities or to the individual schools. In any case a switch to cater for other trades or a modification of existing capacity in different sections may be difficult to achieve.

The qualitative lack of adaptation is due essentially to lack of contact with the undertakings concerned. Industry's support for the work of the school or for training in general may not have been enlisted, efforts may not have been made to ensure that syllabi and local occupational requirements correspond. Teaching staff tend to have little first-hand knowledge or experience of work in the metal trades. Those who do have some are often out of touch with recent developments.

Qualitative lack of adaptation may also be due to a shortage of funds which makes it difficult for the schools to have all the machines, tools and working materials needed for adequate training. This is one of the reasons for the well-known tendency to emphasise theoretical instruction rather than practical training, observation rather than personal work experience.

As a result of this lack of adaptation, vocational schools in many developing countries find it difficult to place their graduates in skilled jobs - even when shortages in the metal trades are known to exist. Employers prefer to take on new recruits with less education and training than to engage vocational school graduates and have to start to train them in the plant according to the actual job requirements.

There have been many efforts to improve the contacts between vocational schools and the metal trades industries and to make training more realistic. In some, but relatively few, cases it has been possible to arrange for practice periods in industry; some schools call in part-time instructors from industry. Attempts have been made to reproduce the workshop situation as realistically as possible in the school, and even to set up production workshops in the school, accepting contracts for the manufacture of components or for repair work from industry or government. Problems have arisen in connection with some of these training-cum-production schemes, however, because production and profits have been allowed to take precedence over training. The schemes have also encountered opposition from employers who sometimes consider production work in schools unfair competition and workers who may see it as a threat to their own jobs.

Whatever is done to improve metal trades training in vocational schools, one central problem remains. By their recruitment standards, by the choice of syllabi and by the tools and machines with which they are equipped, they are mostly geared towards serving the modern sector of the industry. It is recognised that it is extremely difficult for a training institution to cater adequately for all the three sectors of the metal trades - the modern, the intermediate and the traditional. It would however seem imperative, if an adequate expansion of the metal-working industries is to be achieved in developing countries, to broaden the activities of vocational schools so that they cater for the needs of all three sectors. Restructuring the programmes and courses of vocational schools in this manner would, in many cases, lead to a more efficient utilisation of available plant and equipment and teaching staff. At the same time, it would help to obtain a more balanced development of the metal trades industry in the countries concerned.

Apprenticeship: In most industrialised countries apprenticeship in the metal trades is highly organised and subject to the control of public authorities. Criteria are laid down governing the eligibility of an employer to train apprentices, the duration of training is predetermined, detailed syllabi regulate both the theoretical and the practical instruction to be given, related theoretical instruction is compulsory, and public examinations are held to control the quality of training. Employers' and workers' organisations participate in the determination of all these standards. There are apprentice counsellors and advisory services to assist employers and apprentices during training, and trade associations and research institutions working constantly for the continued improvement of the training system generally.[1]

In developing countries few apprentices have the benefit of such highly organised training. Most of them are trained in a much less formal manner by mastercraftsmen and journeymen. In the metal trades this applies in particular to the traditional and intermediate sectors of the industry. Apprenticeship has had all the essential characteristics of guild apprenticeship in European countries in the past and has produced good craftsmen. But such traditional over-all control of apprenticeship by the trade has lapsed in many cases, and the control which it exercised is far less organised and systematic than in modern artisan training in the industrialised countries. In particular, government tends to take little interest in the training given for the sectors, and very often no standards exist for it. The apprenticeship usually consists of picking up traditional skills on the job, according to the work available to the mastercraftsman concerned. But the latter may have far more apprentices than justified either by his work programme or by his possibilities of giving training.

Possibilities of improving this training position are often handicapped by the low standard of general education of both mastercraftsman and apprentices. A study in Nigeria showed that, of a group of eight rural blacksmiths and one welder, six blacksmiths had not been to school at all, a seventh only for two years. The eighth blacksmith was an exception, with ten years of schooling; the welder had had six years. Contrary to what might have been expected, the educational level of the ten boys apprentices to these mastercraftsmen was not very much better. Five had never been to school, one had gone for just three years, only four had had six years of schooling.[2]

This traditional form of apprenticeship exists alongside systematic, modern apprenticeship schemes which have been introduced in recent years by a large proportion of developing countries. These countries realised that the traditional pattern would not supply the skilled workers required for the metal trades as practised

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[1] Cf. European Apprenticeship, ILO/CIRF Publications, Geneva, 1966, 276 pp. (offset).

[2] For further details of this study see N.A. Faminu and B.T. Koch, "The Rural Blacksmith - Case Studies in Nigeria", Training for Progress, ILO/CIRF Publications, Vol. 6, No. 1, 1967.

in the modern undertakings which were being established under their industrialisation schemes; nor would they usually suffice for the intermediate sector of the metal trades which it was hoped to improve as part of the industrialisation drive.

In some cases the approach to a more effective pattern of apprenticeship has been limited mainly to the adoption of new legislation. This has often been very far-reaching in scope and modelled on the latest apprenticeship legislation in industrialised countries. But the countries concerned have not always realised the need for comprehensive parallel action to provide the administrative and technical machinery required for a sound apprenticeship programme. In consequence, the new legislation has done little to improve the situation.

Other countries, however, have taken determined steps to overcome the various problems involved. In these countries the "modern" systems of apprenticeship usually have a number of characteristics in common: the legislation generally makes it compulsory for undertakings above a certain size to organise training according to set standards; steps are taken to ensure that qualified administrative and training staff are available; recruitment criteria, trade descriptions, syllabi for practical and related theoretical instruction have been established; trade tests and examinations of technical knowledge acquired are provided for; basic training centres are set up to supplement in-plant training; advisory services are made available for inexperienced manufacturers; there is adequate supervision and control of training schemes and co-operation between training authorities, employers and workers.

The schemes adopted have tended to give heavy emphasis to engineering trades.

The titles of the metal trades designated as apprenticeable under these schemes in different countries usually do not vary greatly. Typical trades are: fitter, turner, pipe fitter, miller, machine-tool operator, electrical fitter, blacksmith, sheet metal-worker, welder, boilermaker, maintenance mechanic, maintenance electrician, radio and television repairman, instrument mechanic, tool and die maker, refrigeration and air-conditioning mechanic, automotive mechanic. From these main trades specialisations are sometimes derived. In the automotive field, for instance, a distinction may be made between motor vehicle mechanic, diesel mechanic, tractor mechanic and earth-moving machinery mechanic.

As a rule the number of apprenticeable metal trades is much lower than in industrialised countries. In the first place, the metal trades in most developing countries do not require such a high degree of specialisation so that more versatile workers are usually preferred - for instance, workers who can operate both lathes and milling machines.

Secondly, certain metal trades may not be needed to any extent at a country's particular stage of development. Countries in the early stages of industrialisation require primarily workers with the basic metal trades skills - in fitting, welding, machining, sheet metalwork and electricity. In these countries it would therefore often not be necessary to envisage formal apprenticeship for other metal trades. Moreover, some training authorities hesitate to declare a trade apprenticeable unless they are confident

that acceptable training can be provided for it. There may not have been time to analyse needs in less common trades and then to arrange for practical training and related instruction of an acceptable standard.

The possibility of giving acceptable in-plant training is naturally a key factor in the decision whether to introduce apprenticeship for a particular trade. It depends on the way the firm is organised, its work methods and equipment as well as on the availability of staff who are competent to give training. The former aspects are beyond the training authority's control, but in most of the recent apprenticeship schemes provision has been made to check the adequacy of a particular firm to give training before agreeing that it may accept apprentices. But this may pose problems when firms are required by law to take on a specified number of apprentices in terms of the number of journeymen employed.

A conflict between quantity and quality can arise. Many of the employers are not equipped to provide complete training; a journeyman may not have the skills required or pedagogical ability needed for giving adequate training. It would appear to be desirable to allow for some flexibility in setting up such compulsory or permissible apprentice/journeyman ratios and in considering the introduction of a compulsory apprenticeship scheme.

Since it is evident that highly organised systems may not be practicable in many cases for metal trades firms in the intermediate sector and for those in the traditional sector, the provision of some training by the training authority itself to complement individual firms' training possibilities or the organisation of group schemes may be helpful, particularly with respect to providing basic training, related theoretical instruction and experience which individual firms cannot at present give their apprentices. For the traditional sector, a start could perhaps be made by requiring apprentices to attend off-the-job courses of both practical work and theory, for instance through day release or through block release during slack periods, and by organising brief updating courses on a regular basis for the mastercraftsmen with whom they work. In this way the level of training would gradually be improved until really systematic arrangements for adequate training could be made. This action would need to be accompanied by steps to improve work organisation in the firms and to introduce new working techniques and materials.

Other training on the job: It is still very common for new staff to be left to pick up their skills on the job. This is particularly the case for those whose jobs are below skilled level. However, there is now a fairly general trend in industrialised countries to give such new workers at least some off-the-job instruction on safety procedures and precautions, and in related matters; this is often accompanied by induction training. Vestibule courses on manipulatory skills are also being given to an increasing extent for the whole range of specialised operator jobs in the metal trades. Detailed written and oral instructions for work on the job may also be provided.

This trend towards improving informal training has so far been reflected only in a small way in the metal industries in developing countries. It has been limited essentially to a few particularly well-organised and well-managed firms in the modern sector with the necessary training staff.

Some national training services in developing countries are clearly aware of the shortcomings in many firms in their ability to provide for the training of semi-skilled and specialised workers not covered by any apprenticeship schemes and are taking steps to improve the situation. The principal means used to achieve such improvement has been to encourage undertakings to employ full-time or part-time training officers and to train these staff in the planning and organisation of training at all levels, including that of semi-skilled and specialised personnel.

Adult training centres: Adult training centres have been used in a number of developing countries for providing initial training. This has usually been done in the early stages of the country's move towards industrialisation.

In general the centres have been designed to give training for basic metal and building trades. The courses have usually been planned and organised with outside aid, and systematic trainee selection procedures have generally been used. Graduates of the courses have helped to meet the country's urgent needs for workers in the metal trades. As an expedient in a situation of grave shortages, accelerated training in such centres has undoubtedly helped industries to recruit the trained workers they needed.

It is widely recognised today, however, that relying heavily on such expedients can be short-sighted policy. Accelerated training, for narrowly determined occupations does not provide the necssary basis for promotion of workers to take on a wider range of responsibilities as skilled workers or as supervisors. Specialised workers are often less mobile and may not be able to adapt rapidly to technical change within the plants. Concentration on adult training may exclude young school leavers from gaining first-hand experience and training in industry, thereby depriving them of career prospects.

Moreover, any permanent training centre is expensive to establish and operate. If the training is to be effective it must correspond both quantitatively and qualitatively with the real needs in employment. Specialised personnel are required - to establish reliable trade descriptions on which to base the syllabi, to prepare the syllabi themselves, and then to give the training by special accelerated training methods. A full range of up-to-date equipment is necessary, but will inevitably require frequent modification either because of changes in the trade or because changes in demand make it necessary to organise training for different trades.

For these reasons there has been a move in recent years, in both industrialised and developing countries, for the activities of adult training centres to take the form of courses of specialisation and other forms of further training rather than courses of initial training. This trend is discussed in greater detail below.

Further Training

There has been a marked increase in industrialised countries in recent years in the provision made for further training at worker level. This may take the form of special courses in schools and training centres, and of systematic training and experience on the job, including rotation through different work posts. The training is designed to meet a variety of needs - upgrading, updating, retraining. Further training has, in fact, come to be considered an essential component in any national system of vocational training which aims at meeting the needs of both the workers and industry.

To some extent this trend is reflected in developing countries, but efforts in this field have aimed mainly at upgrading the skills of the existing labour force. They have usually followed two lines: intensive training to raise the level of the industrial workforce in general, using all possible facilities; special upgrading courses for the metal trades within the framework of plans to develop a modern metal industry.

Brazil is an example of the first approach. A concerted effort was agreed upon by the various authorities and bodies concerned with training for industry. These included the Ministry of Industry and the National Apprenticeship Service (Serviço Nacional de Aprendizajem Industrial - SENAI) for which the National Confederation of Industry is largely responsible. The scheme, known as the Intensive Programme of Industrial Labour, makes use of training facilities wherever they may be available - technical schools operated by the Federal Government, private vocational and technical schools, in-plant training centres, apprentice centres operated by the National Industrial Apprenticeship Service, etc. Altogether over 400 institutions took part in the programme during the two-and-a-half years from January 1964 to July 1966. During this period some 71,000 persons already employed in industry took short courses of further training for the purpose of upgrading. They occupied various levels in the skill hierarchy - semi-skilled or specialised, skilled, supervisory, technician. Most of the courses dealt with metal trade skills.[1] The programme is still in operation.

China (Taiwan) chose the second approach. It organised a scheme for the further training of metal trades workers (and other levels of personnel) within the framework of a Metal Industries Development Centre. The Centre was established under plans to develop and modernise the metal industry which consists primarily of small undertakings.

The second approach was also adopted by the UAR, but in a slightly different form. The scheme was concerned only with the worker level, the aim being to bring existing metal trades workers, who were already qualified and experienced, up to highly skilled

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[1] For further details of this programme, see "Evaluation of Training in Brazil", Training for Progress, ILO/CIRF Publications, Vol. 5, No. 4, 1966, 48 pp.

level for the country's developing modern metal industry. An upgrading scheme for this purpose was introduced in 1960. It was decided to limit the initial programme to training in basic metal trades, common to most industries: fitting, turning and welding. A ten-week course was designed, consisting of 280 hours of practical training and 20 hours of applied technology. In the training workshops one instructor was responsible for only eight trainees so that he could give each of them individual attention. At a later stage courses in milling, tool and die making, heat treatment, grinding and automotive repair were organised. The scheme met with such success that it was decided to establish special centres for the upgrading courses - these had initially taken place in basic training centres for apprentices.[1]

Further training for the purpose of retraining has so far been less necessary in developing countries than in highly industrialised ones, no doubt because technical change has not yet accelerated to the same extent. It has been required for this purpose in Malta, however, and currently in Singapore. The need for substantial retraining action in the latter has arisen as a result of the withdrawal of its forces and other expatriate staff by the United Kingdom. It is estimated that, by 1971, some 24,000 civilians employed at British military installations in Singapore will have lost their jobs: only 8,000 of them are skilled enough to hope that they might find other employment. The Bases' Economic Conversion Department, with support from the Ministry of Labour and the Singapore National Trade Union Congress, is therefore undertaking a vast retraining effort. Facilities for retraining 2,000 people a year have been created and accelerated training courses each lasting 120 hours have been organised. Turning, fitting, electrical fitting and installation, motor vehicle mechanics, sheet metalwork, welding, electroplating and elementary engineering are included.[2]

A large proportion of the further training action has related to only the modern and the intermediate sectors of the metal trades industry. A number of countries have also included further training, primarily for upgrading, in schemes for the promotion and development of small industry and crafts. This training is usually concerned with instruction in the use of new techniques and materials for mastercraftsmen but may also be available for journeymen.

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[1] See M. Elia, "Upgrading Training of Skilled Workers in the UAR", International Labour Review, ILO, Geneva, Vol. 90, No. 1, July 1964, pp. 35-44.

[2] Cheong Yip Seng, "Retraining the Redundant in New Skills", Singapore Trade and Industry, September, 1969, pp. 24-26.

Training for Technicians

Essentially there are three ways of attaining technician status in the metal industries in industrialised countries:

(1) qualification as a skilled worker in a vocational school or in apprenticeship followed by a period of part-time or full-time training for a period of two to three years in engineering subjects in an industrial college; this system is widely applied in such countries as Denmark, the Federal Republic of Germany and the USSR;

(2) direct entry, after completion of the first cycle of secondary education or graduation from a general secondary school, into a technician training course of three to four years' duration in a technical secondary school, a technical institute or college;

(3) upgrading from worker status - prior qualification as a skilled worker is not always required - through some five to seven years of part-time education and training, mostly in evening classes or through correspondence courses. This third - and long - road to qualification as technician exists in most industrialised countries as a complement to the regular system of technical education.

In the United Kingdom there is a slightly different variant of the last-mentioned way into technician level jobs. The traditional way of becoming a technician has been to enter into a craft apprenticeship and to seek admission to technician certificate courses after completing at least two years of basic part-time craft courses at a technicial college and parallel training in an undertaking. These courses are organised on a part-time basis at the technical colleges, and the trainees usually continue working as craft apprentices in their undertakings.

In addition to these main patterns of training there has developed, largely in response to the rapidly growing demand for intermediate technical staff, a wide range of approaches to technician training on a full-time and part-time basis: sandwich courses, courses for intermediate engineering degrees at public and private technical colleges and universities, technical evening schools, correspondence institutes, and other institutions for technical and vocational education. Some of these courses have been accepted as leading to recognised qualifications at the technician level; others have not, even though their graduates are, in fact, accepted for work as technicians in industry.

Over the past twenty years or so the expansion of technician training has been so rapid, and the attempts at meeting the increasing demand so many and varied in industrialised countries that it may be asked whether it is at all possible at present to enter into a meaningful discussion about how technicians are being and should be trained.

The main pattern adopted by developing countries for technician training is institutional - courses in technical schools and colleges, institutes of technology and so on. Admission to these courses is conditional on completion of a substantial part of, if not full,

general secondary education. It is understandable why this approach has been the most common one so far. Relatively few skilled workers in most developing countries would be educationally qualified to continue into technician level studies; nor would they usually have the financial resources to do so or the time to devote to lengthy evening or day-off studies. The higher prestige associated with continuation of formal studies is also certainly a factor in this choice of pattern.

The institutional pattern of technician training as it now exists in many developing countries has been much criticised in the countries themselves. In India a study was made some years ago of the education and training of technicians in that country. It had been observed that many of those trained as technicians had difficulty in finding jobs. The report on the study, published in 1967 by the Institute of Applied Manpower Research in New Delhi, drew attention to a number of weak points in existing institutional training for this category of personnel. The CIRF abstract of the report summarised some of these points as follows:

> "Investigation of the training given shows that training is sufficiently specialised; the amount of theoretical instruction is insufficient; there is inadequate provision for practical training other than in the institutional laboratories and workshops; and the absence of industry involvement in the formulation or implementation of existing technician training programmes has tended to lead to an imbalance between the training given and the real needs of industry."[1]

Criticism of the lack of industry involvement is common. A Colombo Plan colloquium on intra-regional technician training, held at Bangkok in 1967, concluded that there was a need for greater emphasis on the development and expansion of on-the-job training in order to consolidate the skills and knowledge acquired through institutional training.[2] An expert conference dealing with the training of technicians in the British Commonwealth (Huddersfield, 1966) emphasised the supreme importance of associating industry with all stages of the planning and implementation of education and training.[3]

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[1] For further details of this study in India, see Engineering Manpower - Educational and Training Preparation of Technicians, Institute of Applied Manpower Research, New Delhi, LAMR Working Paper, 1967/No. 2, 73 pp. (see CIRF Abstract No. 10/B 20318, Vol. 7).

[2] For further details, see the Report on the Colloquium on Intra-regional Technician Training, Colombo Plan Bureau, Colombo, 1967, 149 pp. (CIRF Abstract No. 10/B 9421-1, Vol. 8).

[3] Commonwealth Education Liaison Committee, Education and Training of Technicians, London, HMSO, 1967, 326 pp. (CIRF Abstract No. 10/B 14613, Vol. 6).

In order to ensure that training for technicians in India was better adapted to requirements in employment the report on the LAMR study suggested that a sandwich training pattern be introduced. Under this system the first year of study would be spent in a training institution, with weekly day release to industry. During the three years which followed there would be alternation in six-month periods between industry and the institution.

Sandwich courses already exist, but only to a limited extent, in India and other developing countries. Their practicability would appear to depend on the existence in the country concerned of efficient, well-organised undertakings which can provide the necessary all-round and technically acceptable practical experience to complement the more formal and theoretical instruction given in training institutions. Efforts are also being made in many developing countries to arrange practice periods as an integral part of institutional technician training.

A number of developing countries in which an adequate level of general education has now been achieved have begun to approach the problem of technician training in another way - by the upgrading of skilled workers. They have done so within the framework of systematic in-plant training schemes after establishing the necessary central facilities for technical guidance and support. This approach is being adopted in Chile by the National Vocational Training Institute (Instituto Nacional de Capacitación Profesional - INACAP) whose technical facilities have been developed over a number of years and which organises or supervises training of various kinds. These activities include apprenticeship, training for adults, specialisation, upgrading and pedagogical training for instructors and for technical teachers of vocational schools and supervisor training. The courses for technicians will last a maximum of 2,400 hours in three years and be organised in both day and evening classes in order to fit in with the workers' possibilities of attendance. They will cover theoretical and practical subjects according to the trainees' qualifications on acceptance.

A study of the constant flow of articles and conference papers on the subject and resolutions adopted in the recent past, suggest that a few basic questions need to be cleared before any meaningful proposals can be made on how technician training for the metal industries might best be organised in developing countries. As in the case of the vocational training of workers, a distinction should probably be made between the different training needs of the three major sectors of the industry.

One major shortcoming shown up in current literature would seem to be that there is still no clear definition of the term "technician". In reality the term is used for personnel at many different levels carrying out different functions of a more or less specialised character in undertakings in the metal trades. There are draughtsmen and designers, planning, work study and production technicians, technicians working in laboratories and experimental workshops specialising in product development and testing. Some of them need advanced knowledge of engineering technology, mathematics and physics in a narrow sector of applied science; others need highly developed manual skills and a thorough understanding of production techniques and processes.

In an industrialised country, technician training at a secondary school, technical college or institute provides no more than a foundation of technical knowledge and draughting skill - a large proportion of the training of the technician takes place in industry during the first years of employment in metal-working plants. In addition, there is mutual adjustment between training and employment levels. In periods of short supply industrial undertakings tend to adjust the job and the in-service training to what they can get; conversely, when there are more technicians than industry can momentarily absorb, it is the technician staff who accept to adjust their job expectations.

In the developing countries few undertakings are equipped to undertake the comprehensive specialisation and in-service training needed by the graduates of technical secondary schools, institutes and colleges. Further training abroad in more industrialised countries may in some cases meet the needs for their specialisation in advanced technical applications but will not bring a solution to the problems encountered by the majority of the graduates and undertakings.

The answers to the many questions raised may only be found through a thorough analysis of the range of specialised functions for which technicians are needed in developing countries and through redesigning the curricula and methods of training accordingly. An attempt at such an analysis is currently being made by a joint ILO/UNESCO research team at the Turin Centre for Advanced Technical Training working in close co-operation with the competent authorities and a sample of middle-sized and large undertakings in Chile, India and the UAR. This research project is centred on production methods and tool design. Its specific purpose is to identify major shortcomings and discrepancies between what is being taught in technical courses and what technicians in industry are actually required to be able to do.

This study is mainly concerned with the needs of the modern sector; it is intended to extent it, at a later stage, to an inquiry into the technical education needs of technicians working in undertakings in the intermediate and traditional sectors of the metal trades.

Training of Supervisors

Traditionally most supervisors in industrialised countries have been drawn from the ranks of experienced skilled workers. That is still the case today.

General recognition that special training is necessary for supervisors is relatively new. In the early stages any training courses offered for supervisors concentrated on the functional

aspects of their work and the training was more or less comprehensive according to the type of approach and the characteristics of the supervisor population concerned.[1]

Supervisor training has now become more comprehensive in its functional coverage and supervisory training methods have been improved. In industrialised countries it has also been generalised to a far greater extent than ever before. Frequently it now includes provision for further technical education relevant to the trades with which the supervisor is concerned. In parallel with very comprehensive courses, however, simple training based on the lines of the earlier Training-Within-Industry (TWI) continues to be given fairly extensively.[2]

The training is given by a wide variety of organisations: by government departments, technical colleges, institutes of management, specialised organisations of supervisors, employers' organisations and so on.

Industrialised countries can count on the availability of competent and experienced skilled workers with a sound level of general education from whom to draw for supervisory posts. But this is not the case in the majority of developing countries, with the exception of large firms in the modern sector. The shortage of competent skilled workers with leadership potential is all the more serious because it is frequently accompanied by a relatively low quality of the unskilled and semi-skilled workers they will have to supervise. This low quality makes it necessary to simplify tasks and break jobs down into smaller components. In consequence, and particularly if labour-intensive methods are used, supervisors need to have considerable organisational skill.[3] It seems, in fact, that the most critical and acute shortages in many developing countries are at supervisory level, as evidenced by their extensive employment of expatriate staff at this level. As a result of these shortages the vital link between top management, technical offices and the production workshop is often very weak.

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[1] S. Grabe and P. Silberer: Selection and Training of Foremen in Europe, Paris, OEEC/EPA, 1956, (EPA project No. 234), 172 pp.; also P. Hesseling, B. Gustavsson, R. Meigniez, Simone Nodiot, L. de Sitter, K.E. Thurley and H. Wirdenius: "Evaluating Supervisory Training" in Training for Progress, ILO/CIRF Publications, Vol. 4, No. 4, 1965, 48 pp.

[2] TWI (Training-Within-Industry for supervisors): a system of short courses on job instruction, job relations and job methods originated in the USA during the Second World War and later spread to most countries in the world.

[3] W.P. Strassmann, Technological Change and Economic Development - The Manufacturing Experience of Mexico and Puerto Rico, Cornell University Press, New York, 1968, pp. 271 ff.

Because of the shortage of competent metal trades workers with sufficient general education and theoretical technical knowledge, efforts have been made, in many of the smaller African countries as well as in other developing countries, to recruit young graduates of technical schools and colleges as supervisors. However, they usually lack the practical experience, maturity and authority required in such jobs - particularly since many technician courses do not make adequate provision for relevant practice periods in industry. In addition, there tend to be communication difficulties between these young technician graduates and the workers they supervise - they usually come from very different milieux and may have difficulties in understanding one another's problems (social stratification may be more rigid in these countries than in highly industrialised ones).

In the early days of the drive towards industrialisation in developing countries TWI courses were introduced extensively and they continue to be used fairly widely. Gradually more comprehensive functional courses have also been organised by universities, institutes of technology, technical colleges, productivity centres, institutes of personnel management, organisations of supervisors and similar bodies.

However, there has in recent years been increased recognition that exclusively functional training is rarely sufficient to raise potential and existing supervisors to the desired level. Arrangements have therefore been made to organise courses for supervisors which include further technical training and general education as well. Sometimes these courses are combined with ones for full-time instructors whose requirements for further technical training and general education are often similar.

In spite of these efforts the shortage of skilled workers technically and educationally qualified for supervisory posts remains acute. The expansion of general education, the progressive improvement of initial training at the worker level and greater provision for worker upgrading courses will certainly improve the situation in the long run. Meanwhile the need for competent supervisors is urgent and an intensification of short-term action appears to be essential - especially in the intermediate sector of the metal trades (large firms in the modern sector are usually in a position to look after their own needs). In particular, short courses of upgrading combined with related theory and general education organised on an extensive basis for potential supervisors might be very useful in this connection. They would need to be accompanied by brief sessions of initiation into supervisory functions for persons going into such posts or already in them. Provision of training for potential supervisors would appear most desirable as most efforts hitherto have concentrated on existing supervisors.

As in the case of technician training, the problem of expanding and improving the cadre of supervisory staff cannot be solved by a standard or an exclusively short-term approach. In all sectors of the metal-working industry a foundation must be laid by improving the educational level and the training of skilled workers and craftsmen. Opportunities must be offered for existing workers and supervisors to upgrade their skills and their knowledge of modern production techniques: the use of better tools, the selection of materials, organisation and cost control in production, worker

training techniques and other skills needed to perform supervisory functions. Within undertakings long-term personnel upgrading plans and programmes need to be designed and implemented. Above all, technical and vocational schools and training centres, small industry development institutions and other bodies concerned with development of the metal trades will need to broaden and diversify their approach towards helping the industry to upgrade the performance of their present and potential supervisors. Only thus will all three sectors of the industry receive the educational assistance needed for improving and expanding business. That this fact is becoming widely recognised is evidenced by the rapidly increasing number of requests by governments - frequently on the initiative of, or on the basis of demands made by workers and employers in the metal-working industry - for the ILO, UNESCO and bilateral aid agencies to assist in the establishment of multi-purpose training institutions able to provide training at various levels, including upgrading courses for skilled workers to become mastercraftsmen, supervisors and instructors in the industry.

Again, for the supervisors as for the technicians, the basis for determining what types of course and what methods can be used must be a realistic assessment of the educational level, skills and technical knowledge of potential and existing supervisors, the functions they actually perform and those they should perform for improving production quality and efficiency.

Training of Training Staff

The general expansion of training activities, both in training centres and schools and in undertakings, has greatly increased the demand for competent training staff at all levels. As this demand has been accompanied in the metal industry by a parallel increase in the demand for skilled workers, technicians and graduate engineers, an acute shortage of training staff has arisen in most countries. The shortage has been particularly difficult to overcome in the developing countries because of past deficiences in the training given in these countries.

The last twenty years have seen, in consequence, a considerable expansion and development of training schemes for training staff, particularly for the metal trades in view of their central place in industrial activity for economic growth. The term training staff has been interpreted and widened to include people who are responsible for organising, supervising or giving instruction, including those who do so on a part-time basis, in undertakings as well as in training institutions.

Staff Giving Instruction

It is common practice in industrialised countries for recruits to vocational teaching (including practical work) and instructing in training institutions to be required to be fully qualified and to have considerable experience in their trade and extensive pedagogical training before admission to service in a training institution.

The duration and contents of the training given to them and the form it takes vary greatly between countries and according to the type of training involved, recruitement practices in the country concerned and a number of other factors. In France, for instance, new recruits for vocational schools are trained in special teacher/instructor training colleges to which they are admitted after having completed secondary school. The training they receive is both practical and theoretical and includes technical as well as pedagogical subjects. In the same country other categories of teachers and instructors are recruited at the skilled worker or technician level and given a nine-month course of training which includes trade theory and pedagogical subjects; newly recruited instructors for adult training centres are given a course of only a few weeks' duration which is mainly devoted to pedagogical subjects and teaching methods.

In the Federal Republic of Germany teachers for related instruction at the vocational schools must have completed their secondary education. They are normally required also to have extensive practical experience in industry, acquired either by undergoing an apprenticeship or in the form of a period of guided practice lasting for several years. They are then trained in special training institutes attached to technical universities. In Denmark new recruits for vocational schools, normally skilled workers or technicians with extensive experience in industry, receive their initial training in a course lasting fourteen weeks and dealing mainly with pedagogical subjects. Subsequently all vocational teachers or instructors (including those teaching metal trades) are required to take annual technical updating courses and regular (in principle, annual) further training in pedagogical subjects.[1]

In the USA a four-year university course in industrial education is often taken to qualify as a teacher of vocational subjects. In the USSR staff for vocational schools (trained skilled workers) are trained in technicums where they follow essentially technician courses. In contrast with the situation in France and the United Kingdom, metal trades instructors for adult training centres in Italy take a course which lasts some months and includes a substantial proportion of upgrading training, as well as instruction in trade theory and pedagogical subjects. In France, Italy and Spain, after taking formal courses of initial training, adult training centre instructors are provided with very comprehensive documentation showing in detail how each practical lesson should be taught, the equipment and materials necessary and the related theory, including technical drawing required.

As regards training staff for undertakings, the development of more systematic and comprehensive training for them has been one of the most important developments in training in recent years. TWI courses such as job instruction continue to be given, particularly for skilled workers and supervisors giving training on the job. But alongside them, broader courses covering all aspects of an instructor's functions take place: including pedagogics, upgrading, trade theory and general education.

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[1] For further information on this scheme see B. Westh, "Training for Change", Training for Progress, ILO/CIRF Publications, Geneva, Vol. 8, No. 2-3, 1969.

One of the most marked developments with respect to training staff for undertakings has been the emergence of comprehensive schemes organised by employers' and workers' organisations. In the Federal Republic of Germany, for instance, courses for training staff (essentially instructors) are organised by the Economic Council of the Iron and Steel Industry in five separate sessions for a total of approximately 150 hours of instruction; the intervals between the individual sessions are organised not only so that it will be easier for the firms to release their training staff but also so that the trainees will have an opportunity to continue study in depth and to obtain relevant experience between the sessions. The great majority of the persons who have taken part in these courses so far have been metal trades specialists.[1]

A phased scheme of training has been adopted by the United Association of Apprentices and Journeymen of the Plumbing and Pipe-fitting Industry of the United States and Canada, and Purdue University in the USA. A total of five annual one-week courses held at Purdue is required to obtain a certificate as journeyman instructor.[2]

It is now common to provide opportunities of further training both for institutional teaching staff and for those in undertakings. In general, such training covers both pedagogical and technical aspects and, in many cases, upgrading as well. However, difficulty is often encountered in keeping institutional instructors technically up to date. The system adopted by Denmark - as described above - is one approach to this problem.[3]

Efforts are also made to arrange practice periods in industry for the purpose of updating, but these are not always practicable and may not in any case give the desired results. One reason for this is that it is difficult for a firm to fit a member of the staff of a school or centre temporarily into the production process in a way which will give him the required experience without disrupting the smooth operation of production work. Experience limited to observation is much easier to arrange but less likely to give the desired results. To get over this difficulty, the Neuchâtel Technicum in Switzerland has provided for its instructors (who teach apprentices in part-time courses both at the Technicum and at its associated schools) to work part time in a technical development centre attached to the Technicum. This centre designs and manufactures new articles with the help of school workshops, and the instructors' experience there enables them to keep up to date with technical developments in their branch.

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[1] For further information about this scheme, see F. Berghaus, "Training Officers and Instructors have a Mission", Training for Progress, ILO/CIRF Publications, Vol. 8, No. 2-3, 1969.

[2] For further information about this scheme, see M. Eddy and J.P. Coreoran, "A Trade Union Sponsored Scheme", Training for Progress, ILO/CIRF Publications, Vol. 8. No. 2-3, 1969.

[3] Cf. p. 28.

The mastercraftsman in the artisan trades normally trains his workers and apprentices himself. For this reason courses for mastercraftsmen in industrialised countries very often include basic pedagogical training. Arrangements are also made, in several cases, to provide them with detailed documentation which will help them in giving training.

In developing countries the situation as regards training staff is complicated by the general shortage of competent skilled workers and technicians from whom to draw suitable candidates. In institutional training, the problem is accentuated by the inability of the training authorities to pay salaries commensurate with those payable in industry to people with the same qualifications. As a result it is especially difficult to obtain really good candidates for institutional posts, and there is a quite considerable turnover among those already in service.

To cope with this problem many industrialising countries have built up new institutions in recent years to provide systematic training for staff who will, in particular, be teaching in vocational schools and training centres.

In organising training for instructors for institutional training, there have been two main approaches. In the first, relatively short courses lasting from six months to one year (in Morocco they last two years) are organised for new recruits from industry who already have experience in the trade they hope to teach. It has usually proved essential, however, to include technical upgrading in the curriculum as well as pedagogical subjects and practice teaching and, very frequently, further general education.

This wide range of content naturally affects the length of the course. In India experience with the five-and-a-half month courses originally organised in central training institutes (CTIs) for instructors showed that a longer period was required if trainees were to reach a satisfactory trade standard. The duration was extended first to nine months and then, four years later, to twelve months. Trade training (trade practice, trade theory, project work, workshop calculations, workshop science, reading of drawings) now occupies 64.8 per cent of the total curriculum. It is given on an individual basis in accordance with each trainee instructor's needs.

The other approach has been to take general secondary school leavers and to give them a lengthy course (up to four years) which includes full trade training. This approach has been adopted essentially for the staff of vocational schools, whereas the short-course approach has been concerned almost entirely with meeting the needs of training centres outside the school system. The long-course approach has struck certain difficulties because of the lack of industrial experience of the persons trained. In several cases arrangements have been made, under bilateral aid programmes, to send the instructor trainees to an industrialised country for plant experience. But this is not always practicable and, in any case, experience gained abroad may not always be appropriate to local conditions.

So far relatively less attention has been paid to the needs of training staff for industry. But the necessity for such training is fully recognised and more and more developing countries are now

organising special courses for such staff. In some cases they have been trained with staff for training institutions. But the length of these courses often makes it difficult for them to be released by their employers to attend. Arrangements have therefore been made in a large number of developing countries to organise shorter courses for plant training staff. Action of this kind has been undertaken fairly extensively in Latin America, especially by national training bodies. Individual large undertakings or groups of employers, specialised personnel institutions and other bodies have also organised courses. In general, action in this field by employers' organisations is less developed however than in industrialised countries.

In some cases the courses are fairly comprehensive, in others they consist essentially of initiation into basic instruction techniques, for instance by TWI methods. It is evident, however, that, regardless of the type of course given, they are far from meeting the needs of staff giving instruction in plants. In this connection, Algeria has adopted an original approach. It consists of using all staff in industry with some technical qualification to train others in the same field with less knowledge of it. Short instructional courses are being organised for this purpose; in addition, all technician courses are to include pedagogical training.

Relatively small provision has been made for the pedagogical needs of those who give instruction in the artisan trades - the mastercraftsmen. A number of countries use small-industry development institutions and similar bodies to provide short courses but these are far from meeting the very substantial needs.

So far developing countries have made less provision for the further training of training staff, institutional or plant, than for their initial training. It seems inevitable, however, that substantially increased provision will need to be made for such purposes as new metal-working techniques are introduced progressively into developing countries and become generalised. In the meantime a variety of short courses are given by training institutions and specialist trade bodies in various countries, by large equipment manufacturers and by institutions specialising in technical upgrading such as the International Centre for Advanced Vocational and Technical Training established by the ILO at Turin, Italy.

Training Officers

The rapid extension of systematic in-plant training programmes and schemes grouping a number of plants has led to an urgent and extensive demand for training officers competent to plan and programme training activities within undertakings. A new profession is being created - one which is not yet clearly established: the status, qualifications and functions of the training officer in undertakings vary greatly from country to country and between undertakings.

The findings of a research project in the Netherlands are typical of the general position. This project aimed at defining the training officer's tasks and the training he himself needs to fulfil them. The findings were based on a survey of eight firms in

the metal trades and mechanical engineering industries operating officially recognised apprenticeship schemes. In four of these firms the schemes were the responsibility of a staff official (usually from the personnel service); in the other four the programme was carried out by a line official, a supervisor. The actual organisation of apprentice training varied according to who was responsible, and so did the responsibilities of the training officer.[1]

In such circumstances it is not possible to state specifically what the qualifications of a training officer should be and what training he requires. He may be regarded as a supervisor or as a fairly senior member of management. His duties may include the teaching of practical skills or theory and functional subjects only; he may be concerned primarily with the planning and organisation of training and be considered a member of the management team; he may be concerned only with craft training but, alternatively, he may be responsible for ensuring the necessary training for all personnel, workers as well as management staff.

Initially many courses for training officers were fairly uniform and, inevitably, they still cover many of the same subjects. But there is a growing and understandable feeling that, as with other kinds of training, these courses need to be based largely on job analysis, and that only certain elements of a course could be reasonably uniform. Some work has already been done to tailor courses to individual requirements.

The principal feature of the introductory sandwich course for training officers conducted by the John Dalton College of Technology (Manchester, United Kingdom), is thus the use of individual job-related project work tailored to the personal and job needs of each student. The need for this approach is shown by the wide variety of students who took the first course. Ages varied from 19 to 67, status from supervisor to company director, previous training experience from none to a great deal.[2]

Recognition of the need for training officers appears to be dependent upon the stage of economic development reached. So far the need seems to have been felt mainly by developing countries in which a nucleus of modern industry is reasonably well established or in which systematic action is being taken to develop in-plant training schemes (action which itself reflects the existence of industry on a fairly large scale). In a number of cases courses have been organised by training authorities, such as the National Apprenticeship Service (Servicio Nacional de Aprendizaje) in Colombia to complement arrangements for training plant instructors and supervisors. This has been a common pattern in many technical co-operation projects for which the ILO has been Executing Agency.

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[1] See J.W. Putman Cramer, "De Bedrijfsleer-meister", Mens En Onderneming, Groningen, Vol. 22, No. 4, 1968, pp. 202-212 (CIRF Abstract No. 11/B.25647, Vol. 8).

[2] See J.M. Hughes, "Student Work Used in Courses for Training Officers", Industrial Training International, London, June 1969, pp. 274-278 (CIRF Abstract No. 11/B.30396, Vol. 8).

Courses have also been conducted by institutes of personnel management, technical colleges and similar bodies. Their content usually follow a fairly standard pattern based on practice in industrialised countries.

A rather different type of training officer has also been given attention: the one employed by the training authority itself. This is the man whose job may be, on behalf of the authority, not of an individual firm or a group of firms, to assess in-plant training needs and help to plan and implement appropriate training action. His job may involve him in giving brief courses to plant training officers; he may also be called upon to carry out such tasks as assessing firms' suitability for taking apprentices or organising training to complement the firm's possibilities.

It has been the experience in many ILO-assisted projects of technical co-operation that the functions of training advisor need to be reinforced in most developing countries because of the far smaller number of firms or organisations of employers which are in a position to meet their training needs without outside help. There is also a lack of the specialised management consultant firms which are active in industrialised countries in the training field. At the present time, the work of these "official" training officers tends to be concerned to quite a large extent with the modern sector of industry. But there is clearly scope for an extension of their activities, both within this sector and to the intermediate and traditional sectors. It might be desirable, in particular, to foresee group training officers with responsibility for organising or giving training for the apprentices and workers in a group of firms or artisan shops.

CHAPTER III

TRAINING TECHNOLOGY AND TRAINING PROGRAMMES

Parallel to the quantitative expansion of training - within institutions as well as in undertakings - there is intensive action in many countries to reorganise, to rationalise and to improve existing patterns of training and to introduce new methods. Briefly the lines of adjustment in the training systems may be summarised under four headings:

(a) organisational change: revision of the traditional concepts of trade and occupation, adjustment to new needs of the period required for complete training, and changes in the form of training;

(b) technical improvement: achieved through observation and analysis of jobs actually performed in industry, and translation of these observations into revised syllabi and training programmes;

(c) pedagogical improvement: obtained through a process of building the training courses on a concept of active teaching and a logical organisation of training materials along the lines of training by stages;

(d) specification of subject matter, in the form of modules of teaching and instruction, and reinforcement of the training of teaching and instruction staff.

Organisation of Training

The traditional rigidity of training patterns, in terms of trade specification and duration of training, is being broken down in many industrialised countries by the introduction of training by stages, by making provision for training for a second or third trade, and by linking different training courses into complete career systems leading the most able through a series of courses of comparatively short duration from operator level to technician training.

Training by Stages

(a) Experience in Industrialised Countries

The concept of training by stages originated in the Federal Republic of Germany and has been actively promoted in that country by training authorities, by some large and medium-sized undertakings, and by the union of German metalworkers, the Metal Industries Federation (IG-Metall). Since the initial discussion of the plans the idea has spread and many different varieties of schemes of training by stages have been devised and are being tried out in

various countries. The pattern varies but, in general, there are three stages for worker training, each of which usually terminates with practical and theoretical tests. Further stages of specialised or higher level training (for instance up to supervisor or technician level) can be added.

The organisational pattern is essentially as follows:

Stage 1: Basic training common to a group of related trades, mainly in a training workshop.

Stage 2: Application of what has been learned in the first stage, the trainee working as independently as possible; a start is made on learning techniques of a specific trade; given mainly in a training workshop.

Stage 3: Real specialisation; familiarisation with all machines and processes connected with the trade; much of practical training given on the job.

Under some of these schemes:

- Each stage can be considered a terminal point in the training process leading to a certain skill level and allowing the trainee either to continue on to a further stage, if he has the necessary ability, or to enter employment.

- There can be a time interval between one stage and the next, so that a trainee who has chosen for some reason to enter employment after the first or second stage may continue his training when circumstances allow him to take up training again.

- The duration of each stage can be fixed according to the nature of the trade and the ability of the trainee.

- It is possible to increase or reduce the number of stages if this should be necessary.

The concept is thus very flexible. In a number of countries, the system has been applied with slight modifications and at different levels of training, but without any major differences with regard to either basic principles or objectives.

The following examples, relating to the metal trades, illustrate different approaches proposed or adopted in industrialised countries.

Scheme 1

Proposals for training by stages were drawn up by the Management Committee of the Metal Industries Federation (IG-Metall) in the Federal Republic of Germany in 1967. The scheme provides that all young people entering the metal industry irrespective of later specialisation should go through the first of the three stages described below.

Stage 1: 10 months. It is divided into two distinct phases.

Phase 1: Basic training according to the syllabus of the basic course in metalworking prepared by the Central Office for Industrial Training (Arbeitsstelle für betriebliche Berufsausbildung - ABB) for use by metal trades undertakings.

Phase 2: Continued basic training for vocational orientation, centred on the development of dexterity for mechanical operations, heat treatment, assembly by methods using heat, assembly with adhesives, electrical work. At the end of this stage the trainee would choose between various specialisations.

Stage 2: About 10 months, trainees to be divided into five groups - plumbers and pipe-fitters, sheet metalworkers, fitter/assemblers, machine-tool operators and electricians. At the end of this stage, they would have reached skilled worker level.

Stage 3: One year, for training of the most highly skilled workers. It would aim at systematic broadening of the scope of vocational skill and knowledge. Specialisations would be: pipe-fitter, boilermaker, high-pressure pipes and recipient installer, sheet metalworker, metal-frame and scaffolding erector, machine-fitter, toolmaker, precision mechanic, tool setter, electrician (high tension), electrician (low tension).

The Federation considered that it would be possible to reach skilled worker level in two years because of the systematic planning and organisation of the curriculum. The worker's suitability would be checked before he could pass on to the third stage. Suitability for continuing training throughout would be assessed on the basis of progress during in-plant training, of reports from the part-time vocational school attended and of an examination.[1]

Scheme 2

Consideration of training by stages in the Federal Republic has also related to the artisan trades and, after study by the Central Committee on Vocational Training of the Association of Chambers of Artisan Trades (Hauptausschuss für Berufserziehung des Deutschen Handwerkskammertages), a model plan for artisan trades apprenticeship was drawn up. It provides for two stages, with an intermediate examination (comprising theoretical and practical tests) at the end of the second year of apprenticeship. If at that time the apprentice has not secured at least a "satisfactory" mark for the whole range of tests, three alternatives will be open to him:

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[1] See Industriegewerkschaft Metall für die Bundesrepublik Deutschland, Stufe um Stufe, Frankfurt a.M., 1967, 62 pp. (CIRF Abstract No. 7/B 16554, Vol. 6).

(a) he may repeat the second year at the part-time vocational school giving related instruction;

(b) he may, but for major reasons only, break the apprenticeship contract; if he obtained a "satisfactory" mark for the practical tests he will receive a certificate giving him the grade of "helper";

(c) he may continue his apprenticeship and, even if he fails in the final examination, will receive the "helper" certificate, so long as he obtains "satisfactory" results in the practical tests.

Some criticism has been voiced of this plan. It has been stated that it involves the risk that the apprentice may deliberately fail in the theoretical part of the intermediate examination, in order to cut his apprenticeship short and start earning. It has been pointed out, on the other hand, that the system will help to eliminate the less able trainees, and those who do not wish to complete their apprenticeship, from the senior classes at the vocational school and will result in substantially raising the level of achievement in the third year and of the final examination.[1]

Scheme 3

The Federal Office of Industry, Arts and Crafts and Labour (Office fédéral de l'industrie, des arts et métiers et du travail - OFIAMT) of the Ministry of Economic Affairs in Switzerland agreed recently to a proposal made by the Swiss Association of Machine Constructors (l'Union suisse des constructeurs de machines) to introduce training by stages in mechanical engineering trades.

In principle, the existing four years of apprenticeship for these trades are maintained. Training will be divided into two stages. The first stage will last two years and include basic training in a number of related trades, after which the trainee will be qualified to take up a semi-skilled job (Angelernter).

The second stage of specialised training will also last two years, after which the trainee will be qualified to enter employment as a skilled worker. Emphasis will be laid on practical training.[2]

The main difference in the Swiss concept from that applied in other countries is that the duration of the apprenticeship contract, either two or four years, is decided before the training begins. However, apprentices who have only a two-year training contract may continue their training for another two years if they have done particularly well.

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[1] See: G. Freybe, "Ein Modell der gestuften Prüfung", Lehrlingswart, Bad Wörishofen, Vol. 16, No. 2, 5 February 1968, pp. 2-4 and "Gedanken zur Stufenausbildung im Handwerk", Deutsches Handwerkblatt, Bonn, Vol. 20, No. 15, August 1968, pp. 312-313 (CIRP Abstract No. 1/B 21554, Vol. 7).

[2] See D. Aebli, Erarbeitung eines Ausbildungskonzepts in der Maschinenindustrie, Jahresversammlung der Schweizerischen Gesellschaft für Statistik und Volkswirtschaft, Lucerne, 25 and 26 April 1969, 18 pp. (mimeographed).

Scheme 4

The United Kingdom Iron and Steel Industry Training Board has recommended the application of a training-by-stages scheme for the mechanical engineering and electrical engineering trades.[1]

In principle four stages are foreseen. If required, induction training may precede the first stage.

Stage 1: Basic training lasting from 6 to 9 months given in a training centre and common for all trades covered by the scheme; apprentices to be released from work to attend courses of related instruction for at least one day per week or equivalent periods of block release; these courses to be held at a college (vocational school) but may be held in company premises where there are exceptional reasons for this and the standards of education are comparable with those in educational establishments.

Stage 2: Beginning of the first part of specialised training; lasting approximately 6 months, i.e. to the end of the first year and given in a training centre; provision for related instruction similar to that in the first stage.

Stage 3: Further specialised training, also given in a training centre, with varying duration; 24 weeks for fitters, 32 weeks for turners and skilled machinists, 40 weeks for electricians.

Stage 4: Mechanical and electrical engineering apprentices to follow a programme of practical training in appropriate works maintenance departments, the duration of training depending on the trade.

Scheme 5

The concept of training by stages has been applied in the USSR in giving workers initial and further training within the undertaking. For mechanical engineering, three stages are envisaged in one scheme.

Stage 1: Leading to first category of worker qualification and lasting 6 months; 8 years of general education required for admission; trainees learn to carry out the tasks corresponding to this category (qualification for the more able ones possibly to the second category of qualification), working on a single type of equipment and doing simple arithmetic.

Stage 2: Designed for access to the second and third categories of qualification, and lasting 4-5 months; admission depends on completion of first stage and at least one year's

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[1] See: Iron and Steel Industry Training Board, Recommendations for Craft Apprenticeship Training, 1966, London, May 1966, 41 pp. (CIRF Abstract No. 7/B 13792, Vol. 6).

experience of production work; trainees learn to work with different types of machine tools, do more advanced calculations (connected with machine setting), study the construction principles of measuring and control instruments, and learn to read complicated drawings.

Stage 3: Further training for access to higher categories of qualification and lasting 4-5 months; trainees learn to execute a wide range of complex precision jobs and to manufacture parts of top quality, while mastering the relevant mathematics and measurement and control techniques; admission depends on either completion of second stage or graduation from a vocational technical school, with 18 to 24 months' work experience.[1]

(b) Experience in Developing Countries

A number of developing countries, the UAR in particular, have shown considerable interest in the applicability of training by stages to their conditions. The UAR has carried out extensive research on the subject (and on training by modules, which is discussed later in this report) and has organised several meetings with international participation with a view to deciding the best approach. Detailed plans for training by stages have already been drawn up for particular cases. A proposal has thus been made to introduce training by stages for manual metalworking trades in a major industrial organisation which has its own apprenticeship scheme.[2] A survey of manual metal trades was made within the organisation and six specialisations were determined: instrument mechanic, machine fitter, tool and die maker, machine repair and maintenance mechanic, sheet metalworker and assembly fitter. Three stages of formal training were envisaged, each being followed by a prescribed period of practical experience which is an integral part of the stage.

Stage 1: Leading to Level C, or classification as semi-skilled worker, lasting 9 months; basic training to be given in the six trades mentioned above and to be followed by a year of practical training in production work.

Stage 2: Leading to Level B, or classification as skilled worker and lasting 6 months, the six trades being combined into three branches of which the trainee chooses one; fine mechanical fitter, assembly and repair fitter and sheet metalworker; followed by a year of practical training in production work.

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[1] See: S. BatyŠer, "Diplom raboČego", SocialistiČeski Trud, Moscow, Vol. 12, No. 3, March 1967, pp. 91-94 (CIRF Abstract No. 4/B 17992, Vol. 6).

[2] See: A.B. El Koussy, Proposals for Applying Step-By-Step Training in the Field of Manual Metalworking Trades - paper submitted to the Central Training Organ Seminar on Step-By-Step Training, Cairo, 14-20 July 1969, 4 pp.

Stage 3: Leading to Level A, or highly skilled worker, in one of the six trades, and lasting 6 months; followed by a year of practical training in production work.

In principle three more stages can be added leading to the technician level.

Modules in Training

Experience gained through work study and other analytical work relating to workers' actions and performance on the job has shown that it is possible to isolate and describe, in practical operational terms, units of activity which may be dealt with as separate operations constituting parts of a complete job. The operating techniques into which twenty-five mechanical engineering and metal trades were broken down in Argentina[1] are examples of such units. Analysis of such operations, from the training viewpoint, has shown that it is often possible to build up a training plan for a trade, or a particular work post for which full tradesman qualification is not required, by organising them into training modules.

Traditionally the basic module applied to training has been a time module. Training programmes have been worked out as "lessons" of a standard duration, or as a period of time serving - the 3, 3 1/2, 4 and 5-year apprenticeship concepts. The time module is now being abandoned as a basis for the organisation of courses and replaced by a technical/pedagogical unit. Under such a concept a module should, operationally, be determined on the basis of an analysis of productive work activities. From a teaching methods point of view, it may consist of one or several work operations and of one or several instruction units; it should have internal unity, i.e. be composed of elements of essentially the same technical character, involving the application of a limited number of technical principles on a variety of jobs; it should be designed in such a way that it may be combined with other modules to provide for broadening trade skills or for reaching a higher level of work; and it should be a "testable" unit, i.e. it should be possible to devise a way of testing the level and quality of skill and knowledge acquired.

It is felt also that a module need not be a very large unit - in fact, a module often consists of a combination of knowledge and skill which may be acquired in the course of a few hours or days and relate to a narrowly conceived operation - and that it need not necessarily form part of one trade only. It has been shown by experience in the establishment of modular systems of training that many modules are common to several trades. For this reason, they may be suitable for inclusion in basic training for a group of related trades as well as in initial and further training for each trade or part of a trade.

In essence, an individual module can be taken as and when required. The term sometimes used in the United States - DIDO (Drop In Drop Out) - illustrates this and the extreme adaptability of the modular system to changes in job requirements.

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[1] Work done under this project is described in some detail on pages 42-44 below.

Pedagogically, one of the principal advantages of working out training modules is that it is possible to make up standard training packages while maintaining the utmost flexibility. Those organising training can combine the modules they need into different types of course and use a combination of packages which may differ from the one used at another training place or in another undertaking.

Because of the extreme flexibility of modules they would seem to be very suitable in certain cases for developing countries, several of which are now planning to introduce modular systems. However, requirements in organisational facilities and qualified personnel would be substantial. This is shown in the following outline of the sequence of action involved in establishing training modules.

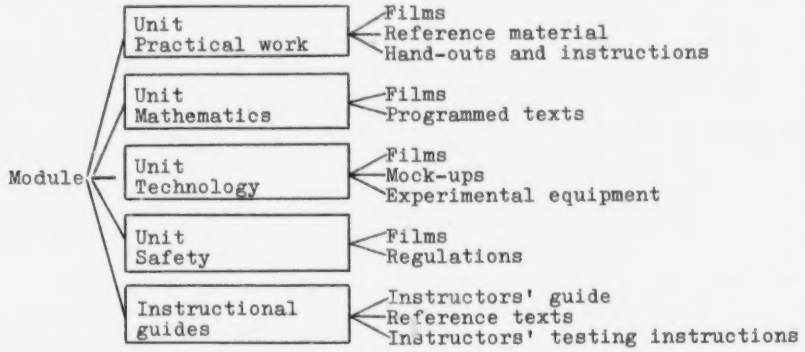
1. Determine the content of the modules by studying the work performed by people employed in the occupations involved.

2. Determine the units of skill-building required to make up the module - each being a specified operation in itself.

3. Determine the content of the related units needed to provide the necessary related knowledge, e.g. safety, measurement techniques.

4. Build up a package which will contain:

   - the exercise unit for practical work;
   - the necessary units of mathematics or measurement - possibly programmed;
   - the necessary units of technology - possibly programmed;
   - the safety requirements unit as well as the necessary instructional guides and references;
   - the instructional aids.



The amount of work involved in constructing a training programme on these lines is evident if the skills which make up a common trade, such as welding, are taken as an example. It has been estimated that over 100 modules would be required for mastery of all the skills involved. It is probable, of course, that workers with only a proportion of these skills will be required. But in order to determine the desirable content of one or more modules for these skills it will be necessary to consider the inter-connection of these skills and their possible interdependence with others and construct the module(s) accordingly.

It would appear that, for some production processes involving high specialisation of workers' functions, it might be practicable to make use of modules' special characteristics, such as their self-contained character, by organising very short training courses (for unskilled persons particularly) in order to meet narrow skill and job requirements. The courses would consist at most of a few modules, if not of one only, and each module could be of very short duration. However, the practical implications of this particular aspect of the modular system will depend on the specific conditions on the spot and would require thorough study and experimentation before firm arrangements were made.

Use of Trade Descriptions

Even when complete and comprehensive module systems are not developed, detailed job descriptions, established on the basis of job analysis are being worked out to improve quality and efficiency in training. Recognition of the need for them became more general in connection with the intensification of schemes of adult training, in which close correspondence between requirements in employment and the content of training is of course particularly important.[1]

It is now fairly common practice all over the world for syllabi used for institutional training and, but less often, for in-plant training, to be based on trade descriptions prepared after comprehensive and very systematic analyses of the trade concerned. Experience in Argentina is indicative of the stage reached in countries well advanced towards industrialisation. Emphasis is being placed on adult training as a means of raising skills quickly. The National Council for Technical Education (Consejo Nacional de Educacion Técnica - CONET) accordingly arranged for detailed analyses to be made of twenty-five mechanical engineering and metal trades with a view to the preparation of trade descriptions suitable for use in accelerated training. The study, carried out with international technical co-operation, took into account adult training experience in Belgium, France, Italy, the United Kingdom, and the USA, and the trade definitions in the 1962 edition of the International Standards Classification of Occupations.[2]

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[1] It is worth noting that the Vocational Training (Adults) Recommendation, 1950 (No. 88) provided for the first time in an ILO vocational training instrument for a detailed analysis of the occupation to serve as a basis for training. The Vocational Training Recommendation, 1939 (No. 57) adopted 11 years before had no such provision.

[2] A revised version was published in 1968.

Table I

Detailed Analysis of 25
Mechanical Engineering and Metal Trades Occupations

| OCCUPATIONS \ OPERATING TECHNIQUES | Grinding | | | | | | | | | | | Boring | | | | | | | | | | | | Heat Treatment | | | | | | | | | | | |

The work was carried out in a series of different phases as follows:

(1) each trade was broken down, on the one hand, into the operating techniques which form its essential components, and on the other hand, into operating techniques which form supplementary elements;

(2) these operating techniques were combined into groups with closely related or similar characteristics;

(3) "trade profile diagrams" were prepared, which presented graphically the content of each trade in terms of the above groups and indicated the degree to which each group of operating techniques was used in the particular trade (table I indicates the position for three groups of operating techniques);

(4) after analysis of these diagrams the trades were grouped into divisions and subdivisions of related trades with common groups of operating techniques;

(5) profile diagrams were prepared of skills and knowledge common to each division and subdivision of trades and, finally, detailed trade profile diagrams were prepared for each trade.

These provided the basis for the trade description drawn up for each trade which gave information under the following headings: (1) main operating techniques; (2) related operating techniques; (3) product maintenance work; (4) working conditions, tools and equipment used; (5) work in maintenance of tools and equipment and production of hand tools; (6) technical trade theory and work organisation involved; (7) physical and psychological aptitudes required.

The trade descriptions classify the trades into three major groups related to machine tools, fitting and heat treatment of metals.

The syllabus for a particular trade is prepared on the basis of the trade description. It consists of a series of instruction sheets (one per operating technique). These indicate the operating technique involved, the prerequisite training and education, the background knowledge involved and the particular manual skills and related instruction (technology, arithmetic, safety factors, technical drawing) used. In preparing the instruction sheets account is taken of the possibility of using sheets covering operating techniques common to other trades in the courses for these trades also.

Altogether 389 operating techniques were covered in the 25 trades as a whole.[1]

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[1] CONET, Formacion profesional acelerada - Estudias generales, sección mecánica, Buenos Aires, 1967, 45 pp. (CIRF Abstract No. 12/B 26616, Vol. 7).

Teaching Techniques

A number of new teaching techniques have been introduced in recent years. Of these, probably the most important innovation is Programmed Instruction (PI).

In vocational training programmed instruction is still to a large extent in an experimental stage. Programmes applicable to metal trades training have been written in the USA, where this pedagogical renewal started, in the United Kingdom and the USSR, as well as in other countries. The fields covered include technical drawing, turning, electro-technics, basic mechanics, trade arithmetic and mathematics. They have been used for both institutional and in-plant training and are usually tried out experimentally in the first instance, frequently within the framework of research projects. Work is often directed towards determining the relative efficiency of PI by comparison with other teaching techniques or towards the most appropriate type of PI for a particular training situation.

The types of project carried out are illustrated by the following examples. In the USA a "conventional" method of training, using sixty-five hours of lectures, films, laboratory work and informal discussion was compared with a method using programmed instruction, both with and without laboratory experiments, as means of teaching basic electricity to industrial employees.[1]

A project was carried out in the United Kingdom by two manufacturing companies and the Programmed Instruction Centre of Enfield College of Technology to establish the effectiveness of PI when used to teach the operation of machine tools, and to compare taped and written programmes when used for this purpose. The programmes were designed to teach first year craft apprentices to operate a central lathe.[2] Programmed testing has been used in the USSR to check the answers of pupils in a vocational technical school to technical problems designed to develop logical thought. It was first used in a course on electro-technics for future metalworkers.[3]

From the viewpoint of developing countries it would seem that PI has considerable potential. It can help to combat the shortage of instructors and teachers since it relieves them from routine tasks so that they can concentrate on individual guidance for

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[1] See: L.N. Geer, "A Study of Comparative Methods of Teaching Basic Electricity", Journal of the American Society of Training Directors, Madison, Wisconsin, Vol. 16, No. 12, December 1962, pp. 17-24 (CIRF Abstract No. 13/01549, Vol. 2).

[2] See: R.J. Amswych, "An Investigation into the Use of Tape Recorded Programs for Craft Training", Programmed Learning and Educational Technology, London, Vol. 4, No. 3, July 1967, pp. 196-201 (CIRF Abstract No. 13/B 19276, Vol. 7).

[3] See M. Kazinik, "Racional-naja metodika prepodavanija electrotenniki", Profesional-no-techničeskol Obrazovanie, Moscow, Vol. 25, No. 4, April 1968, pp. 14-15 (CIRF Abstract No. 13/B 24102, Vol. 7).

trainees; an even quality of instruction is ensured; trainees work at their own speed; testing and evaluation of the skill and knowledge acquired are built into the programme.

It is obvious, however, that a simple transfer or translation of programmes prepared in industrialised countries would not usually be technically acceptable except for certain cases in the modern sector of the metal trades. In general, special programmes need to be devised within each cultural context. Given the low level of general education of many trainees in developing countries, it is clearly desirable for programmes to make use not only of the written word and symbols but also of pictorial images and sound. This need for pictorial image and sound to be used to a far greater extent has in any case been recognised in industrialised countries also.

The value of PI based on sound instead of exclusively on written instructions was shown in experience by an American electronic components factory situated on the Mexican border. Almost all its workers were female, illiterate, knew no English and had no experience of factory work. As production trouble developed, instruction was switched over to audio-visual methods; each worker was equipped with earphones through which the necessary programmed instructions were issued as each operation was completed. After the introduction of this PI based on sound, the training time was reduced from 8 weeks to 1 day, labour turnover by 40 per cent; production rose from 1.5 to 2.3 units per week and worker; rejects were reduced from 50 per cent to 3.7 per cent.[1]

Considerable interest has already been shown in PI by developing countries, and many of them have already introduced programmes for particular types of training. But the number of such programmes is still low. One of the factors holding up their development is the shortage of qualified programmers and of the necessary organisational framework. The need for qualified programmers has been stressed on a number of occasions. This is one of the conclusions reached by a technical meeting on new vocational training methods which took place in Venezuela in 1965 under the auspices of the Inter-American Research and Documentation Centre on Vocational Training (CINTERFOR). A course for programmers in the region was subsequently organised by CINTERFOR to help meet with need.

There has also been general recognition that the application of PI in developing countries requires further research and experimentation. This was emphasised in a UNESCO report on the subject which took account of pilot experience in Jordan, Nigeria and the Lebanon in particular.[2] The report was published in 1965, since which time a specialised research institute on PI has been set up in the Lebanon.

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[1] See: E. Heckscher, "La notion de systèmes dans la formation du personnel d'exécution", Hommes et Entreprises, Paris, November 1966, pp. 1-11 (CIRF Abstract No. 13/B 12702, Vol. 6).

[2] For details of this experience and the conclusions drawn, see K.P. Komoski, E.J. Green, W. Schramm, Programmed Instruction in West Africa and the Arab States, Paris, UNESCO, 1965, Educational Studies and Documents: No. 52 (CIRF Abstract No. 13/B 1646, Vol. 4).

CHAPTER IV

TRAINING IN DEVELOPING COUNTRIES

Administrative Aspects and Priorities

In considering training action aimed at helping to develop the metal industry and raise its quality, developing countries need to establish priorities and to concentrate available resources in know-how and funds on action which will have the greatest impact. Frequently this action will not consist of direct organisation of training but of the provision of an administrative infrastructure - from which training can be planned, organised, encouraged, helped, guided. It will then be for the infrastructure to establish priorities for direct training action, in the light of plans to develop and improve the metal industry.

In the past twenty years most developing countries have in fact been preoccupied with creating the necessary legal and administrative framework for training action. They have had to take new political structures into account, to create training bodies and consultative committees, to allocate ministerial and other responsibilities for training, to ensure budgetary resources for training and to define the training obligations of employers and trainees, etc. In doing so, particular account has invariably been taken of the needs of the metal industry.

Various patterns have been adopted for the training infra-structure. Sometimes it is predominantly governmental; sometimes - as in Brazil - industry itself holds substantial responsibility for carrying out many of the functions of a training authority, over and above its direct participation in organising and giving training.

The pattern chosen for the training administration naturally varies according to national practices. But regardless of the pattern, there is a growing trend for employers' and, rather less frequently, workers' organisations to be associated with it.

Provision needs to be made in any case for a number of essential functions: allocating over-all training responsibilites; setting training priorities in the light of training needs and practical possibilities; deciding how to provide training in accordance with these priorities; setting the necessary training standards; ensuring that the necessary training staff are available; providing such training as cannot be given by other facilities - by training institutions or undertakings; carrying out research to determine the most appropriate methods of training in given circumstances.

The decision on the allocation of over-all training responsib-ility is usually taken at top government level, outside the training framework. But, once the decision has been taken, the metal industries have a role to play in ensuring that their training needs are taken into account in the establishment of training priorities and that they are fully associated with the implementation of these priorities.

The priorities set need to cover both the groups of the population to be trained and the economic sectors - a choice is likely to be necessary in each case. As regards the training population for which priority provision should be made, various views are expressed. It is sometimes stated that the young should be given preference and that broad training should be provided for them after a sound general education in order both to facilitate their adaptation to changing job requirements and to give them an adequate career opportunity. The view is also expressed, however, that developing countries cannot afford to wait till young people have acquired the comprehensive training and experience without which they cannot make a real contribution to the country's economy - training priority should therefore be given to adults. This opinion, in its turn, is criticised on the grounds that much adult training is too narrowly specialised to give the broad skills at present required in a large proportion of the metal industry in developing countries or on which to build subsequent adaptation to change.

It is clear that each of these viewpoints has some justification. It would seem that the aim should be to achieve a balance between short-term and long-term needs. The former could be catered for by specialised, often narrow training for adults, with provision for further training as practicable. Action to meet long-term needs would relate both to young people and to adult cadres. For the latter broad training would also be essential. Here again, provision for further training would be necessary.

As regards the decision on priorities for particular branches of economic activity, high, usually top priority has normally been given to the metal industry and metal trades in general. But this priority has in most instances related to the modern sector and, but to a less extent, the intermediate sector; little, if any at all, has been given to the traditional sector.

This distinction with respect to priorities between the sectors of the metal trades has been reflected in the implementation of the other essential functions for which provision needs to be made in the training infrastructure. Less attention has been given to meeting the needs of the intermediate and traditional sectors - particularly the latter.

The decision on the sectors of the metal industries to which particular attention should be given is of course one for each country to take. There would seem, however, to be a need to develop existing arrangements so as to cater to a greater extent for the small industrial firms and traditional metal crafts in which productivity tends at present to be very low.

One way of doing so could be to intensify the extension work and training activities now carried on by small-industry development centres and similar bodies in most developing countries. Arrangements could be made to introduce new working methods, new organisational patterns, new materials and, at the same time, to organise training as required for these innovations.

Both to supplement such action and to work towards improving the metal industry in general, intensified training activity by employers' and workers' organisations concerned with the metal industry and metal trades also appears desirable. In developing countries there are relatively few cases of specialised metal

industry or metal trades employers' or workers' organisations which provide infrastructural support to training action. In industrialised countries, hower, such workers' or employers' organisations often play a vital role in improving the quality of the labour force with which they are concerned. The activities of IG-Metall, the metal trades organisation in the Federal Republic of Germany, in drawing up a plan for training by stages have already been mentioned. Its activities in connection with training as a whole for the metal industries are extremely wide. So are those of the Economic Council of the Federal German Iron and Steel Industry and of the United Association of Apprentices and Journeymen of the Plumbing and Pipefitting Industry of the United States and Canada - both mentioned in connection with training staff. The Swedish Metal Trades Employers' Federation (Sveriges Verkstadsförening - SVF) has also adopted a particularly comprehensive approach in providing help to its member undertakings in their training programmes. The responsibilities of its Training Department include carrying out teacher and instructor training and pedagogical development work, in addition to developing training syllabi, doing experimental work, designing and producing teaching aids and providing functional training for supervisors.[1]

It would seem that action along these various lines could help considerably in reinforcing the administrative training infrastructure for the metal industries in developing countries.

Other desirable training steps towards improving the metal industries and metal trades in general might be to develop group training schemes to a far greater extent; to consider possibilities of concerted action within a region or by a group of countries to meet certain training needs (such as training for instructors, technicians, supervisors and training officers), for research into appropriate training methods and patterns for the metal trades, or for the establishment of training documentation and syllabi.

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[1] For further information on the Training Department's activities see F. Santesson and K.R. Staf, "SWEMETAL: Training - output - productivity", Training for Progress, ILO/CIRF Publications, Geneva, Vol. 5, 2-3, 1966, pp. 41-50.

POINTS SUGGESTED FOR DISCUSSION

Some of the implications of building up comprehensive training systems for personnel at various levels in the metalworking industries and in the metal trades in general in developing countries have been brought out in preceding chapters. The main trends in training for the metal trades have also been discussed. The Metal Trades Committee may wish, while noting these main trends, to focus its attention on the problems faced by developing countries wishing to use vocational training as a means of improving metalworking industries and metal trades in general, within the framework of industrialisation, and to consider desirable action for this purpose.

The points given below have been prepared on this basis and may serve as guidelines for the discussion. The Committee is of course free to suggest such changes or additions as it may consider appropriate.

Existing Systems of Metal Trades Training

1. Main quantitative and qualitative shortcomings in existing systems of training of developing countries relating to workers, supervisors, technicians, instructors and training officers in:

- the modern sector of the metal trades;
- the intermediate sector of the metal trades;
- the traditional sector of the metal trades.

2. Criteria for the determination of priorities in training action to encourage the development of the metal industries in developing countries and to improve their productivity and quality.

Organisation of Training at Various Skill Levels for Metal Trades Personnel

3. Main ways in which initial training is currently provided in developing countries, for the modern, intermediate and traditional sectors of the metal trades respectively, for such personnel categories as:

- workers;
- technicians;
- supervisors;
- instructors;
- training officers.

4. Extent to which each main organisational pattern of initial training is meeting the requirements for trained personnel in the modern, intermediate and traditional sectors respectively in respect

of the above categories of personnel and any others which are considered particularly important.

5. Ways in which each main organisational pattern of initial training for the different categories of personnel might be improved.

6. Ways in which provision is currently made for the further training of the various categories of personnel in the modern, intermediate and traditional sectors respectively, and possible ways of improving these arrangements in each case.

7. The applicability and use of new training technologies in developing countries, including:

- training by stages;
- the use of modules in training;
- the use of trade descriptions as a basis for syllabi;
- programmed instruction.

National Policy for Training Metal Trades Personnel

8. Sectors of the metal trades which should be given priority in training action.

9. The desirability of achieving a balance between meeting short-term and long-term needs for trained personnel.

10. Particular categories of personnel which should be given priority in training action.

11. The desirability of joint action (within a region or by a group of countries) or of using technical co-operation to support national possibilities:

- for giving training;
- for research into training;
- for other training purposes.

The Administrative Infrastructure

12. Desirable modifications or other changes in the administrative infrastructure for the purpose of improving the modern, intermediate and traditional sectors respectively of the metal trades, and including:

- the functions which a training authority should have;
- the participation of employers' and workers' organisations in planning and controlling training, in establishing training standards for and in assisting generally in the training effort of both training institutions and undertakings;
- the use of small-industry development centres and similar bodies to reinforce the training infrastructure.

VT 019 130

VT 019 130
DUNCAN, JAMES A.
A STUDY OF CURRICULUM CONTENT AS RELATED TO DRAFTING AND DESIGN ENGINEERING TECHNOLOGY COURSES.

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DESCRIPTORS - *CURRICULUM RESEARCH; CURRICULUM DEVELOPMENT; *COURSE CONTENT; *POST SECONDARY EDUCATION; UNIVERSITIES; *ENGINEERING TECHNOLOGY; *ENGINEERING GRAPHICS; COMMUNITY COLLEGES; COURSE EVALUATION; TECHNOLOGY

ABSTRACT - TO DETERMINE THE CONTENT OF DRAFTING AND DESIGN COURSES AT THE TECHNICAL INSTITUTE, COMMUNITY-JUNIOR COLLEGE, AND UNIVERSITY LEVELS AS INDICATED BY COURSE TITLE, AS WELL AS TO DETERMINE THE NEEDS FOR INSTRUCTORS IN THE FIELD, QUESTIONNAIRES DEVELOPED PARTIALLY FROM TWO COMMONLY USED TEXT BOOKS WERE DISTRIBUTED TO INSTRUCTIONAL PERSONNEL IN ONE MAJOR UNIVERSITY FROM EACH STATE WHOSE ENROLLMENT WAS TWO THOUSAND OR MORE, AND 110 JUNIOR COLLEGES AND POST-SECONDARY INSTITUTIONS. FINDINGS AND CONCLUSIONS REACHED INCLUDE: (1) MOST DRAFTING AND DESIGN INSTRUCTORS INCLUDE ENGINEERING GRAPHICS IN THEIR TECHNOLOGY PROGRAM, (2) THE CURRICULUM CONTENT IS CONSISTENT WITH THAT INDICATED IN THE CURRICULUM CONTENT PORTION OF THE TEXTBOOKS USED FOR THE STUDY, (3) VERY FEW INSTITUTIONS INCLUDE MACHINE DESIGN, TOOL DESIGN, AND DESCRIPTIVE GEOMETRY AS SEPARATE COURSES IN THEIR PROGRAMS, (4) PROCESS PIPING, AERONAUTICAL DRAFTING, AND TOPOGRAPHY ARE RARELY TAUGHT SEPARATELY, BUT RATHER ARE INCORPORATED INTO ENGINEERING GRAPHICS, AND (5) THERE IS A DEFINITE NEED FOR INSTRUCTORS OF DRAFTING AND DESIGN COURSES. TABLES PROVIDING SUPPLEMENTARY DATA ARE INCLUDED. (AUTHOR/SN)

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A STUDY OF CURRICULUM CONTENT AS RELATED TO DRAFTING AND DESIGN ENGINEERING TECHNOLOGY COURSES

by

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A research report submitted in partial fulfillment
of the requirements for the degree
of
Master of Science
in
Technical Education

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INTRODUCTION

The "Engineering Manpower Commission" recently published the results of a survey revealing the number of technology degrees awarded by 428 schools located throughout the continental United States. (1, p. 410) The report also contained a table which states the number of degrees awarded in Engineering Technology and Industrial Technology, 1968-69, by curriculum. Included in this table of technology curriculum is "Drafting and Design" in which the tabulated results state the following: Associate degrees for all schools, 1,747; Associate degrees for schools with ECPD Accredited Curricular, 646 and Bachelor's degrees for all schools, 122. (1, p. 411)

> The degrees listed under the headings of "Drafting and Design" and "Industrial Technology" are those that gave no additional description as to their technical orientation. The actual nomenclature of technology curricula is so diverse and unstandardized that some kind of a simplified grouping is a practical necessity. (1, p. 411)

Many post secondary schools in this country have programs that include courses in the areas of drafting and design. Often these programs in the junior college or community colleges are structured in such a manner that they are a duplication of those offered in four year institutions. (2, p. 57)

> In drafting and design curriculum there is normally an overemphasis on the development of drafting skills as they are applied in various specified areas such as machine drafting, electronic drafting, topographic mapping, pipe drawing, welding drawing, etc., with very little opportunity or time for course work in the basic sciences and mathematics in the applied engineering sciences, and the technical speciality courses. (3, p. 57)

THE PROBLEM STATEMENT

The problem of this investigation was to determine the content of drafting and design courses at the technical institute, community-junior college, and university levels as indicated by course title, and to determine the need for instructors in the field. In regard to the above statement an investigation has been made as to the content of drafting and design courses as taught in a number of post secondary schools in the continental United States. This investigation included estimates of future teacher needs as indicated by those post secondary schools used in the investigation. These data have been supplied by departmental directors, and instructors directly associated with drafting and design courses.

PURPOSE

One purpose of this study was to determine which type of post secondary school taught the following courses: engineering graphics, machine design, tool design, descriptive geometry, process piping, aeronautical drafting and topography. A second purpose was to obtain an estimate of the number of hours each responding school devoted to each phase of a course. This study was also made to determine if there is a need at the present time and in the near future for instructions of drafting and design.

A review of technical publications indicated that there is a definite need for drafting and design instructors in junior and community colleges. John L. Ferier states, "In the field of vocational and technical education only 44 per cent of the graduates enter teaching resulting in a shortage." (4, p. 23)

LIMITATIONS

The specific limitations of this study were as follows:

1. This study was limited to post secondary schools only.

2. Only one major college or university from each state was selected by the writer.

METHOD

DESCRIPTION OF SAMPLES

The sample used in this study was determined by the random selection of 110 junior colleges and institutions. Also, one major university from each state with an enrollment of two thousand or greater was selected by the writer. The names, positions and addresses of personnel at the institutions selected to participate in this survey was taken from two sources: (1) The Technical Yearbook (5) and (2) Industrial Teacher Education Directory. (6)

RESEARCH DESIGN AND PROCEDURES

The survey instrument that was sent to the schools participating in this study may be found in the Appendix A. The "curriculum content" portion of this form was taken from two popular text books used in drafting and design engineering technology courses today. A comparison was made between the two books and found to be very similar as to course content. The titles of these texts are Engineering-Technical Drafting and Graphics (7) and Technical Drawing. (8)

The method of determining the need for instructors in the field of engineering drafting and design was incorporated as part of the survey

instrument. Each sample participating was asked to estimate the future need at his institution for the next 1, 3, and 5 years.

FINDINGS

ANALYSIS TECHNIQUES

The seventy schools that responded to this study are listed numerically by school in Appendix B of this study. Any reference to a sample on this report will be done numerically and will correspond to their number on this list. Of the seventy respondents seven stated that their institutions did not offer courses in drafting and design. These seven samples are numbers 19, 24, 26, 27, 31, 39 and 40. These seven samples are not included in this report except to recognize them as having responded to the questionnaire.

In the analysis of this investigation a comparison was made of the contents of each course as indicated by the persons responding to the questionnaire. A table was designed for each course title included in this study. Each of these tables is headed "Survey Results Regarding . . .", followed by the title of the course. The tables numbered I through VII are designed to show three classifications of schools: community colleges, universities and technical institutes. The total number of responding samples for each particular course title is indicated at the top of the table. The tables also include a column headed "Total," which indicates the percentage for the total sample in each category. The per cent of samples for each classification that include each particular course content is shown in tabular form. The participating

samples for each course title are indicated by classification in the left margin.

The results of these data show that in Engineering Graphics, Table I, the precentage of schools including each curriculum content is reasonably close except in a few cases. The community colleges placed less emphasis on shop processes, intersections and developments, gearing and cams, structural drawings, and threads, fastenings and springs than did the universities and technical institutes. The technical institutes place more emphasis on intersections and developments, gearing and cams, electronic drawings and mapping, piping drawings and welding representatives than did the universities and technical institutes.

In regard to Machine Design, Table II, the universities emphasized lettering, multiview projection, sectional views, auxiliary views, dimensions, perspecture, intersections and developments, and structural drawings more than community colleges and technical institutes. The community colleges show a higher per cent in welding representations, whereas the technical institutes show a higher per cent of curriculum content in empirical equations. The community colleges indicated the structural drawings and topographic drawings and mapping were not induced in their curriculum. Universities indicated that topographic drawings and mapping and empirical equations were not included. All other curriculum content is reasonably consistent.

In regard to tool design, Table III, the three classifications emphasized shop process, dimensions, tolerancing, threads, fasterners and springs, welding representations and tool and die making. The remaining curriculum content was inconsistent, with the exception of

TABLE I

SURVEY RESULTS REGARDING ENGINEERING GRAPHICS 6

NUMBER RESPONDING SAMPLES: 56

RESPONDING SAMPLES

Community College

3, 4, 5, 9, 13, 15, 16, 22, 23, 29, 30, 35, 36, 37, 41, 42, 46, 49, 51, 54, 60, 61, 62, 64, 69

University

1, 2, 6, 10, 11, 12, 17, 20, 25, 38, 43, 47, 50, 53, 55, 58, 63, 70

Technical Institute

7, 21, 28, 32, 33, 34, 44, 48, 53, 56, 57, 67, 68

CURRICULUM CONTENT	PER CENT			
	COMM.	UNIV.	TECH.	TOTAL
Lettering	100	95	100	96
Sketching	88	100	92	98
Multiview Projection	100	89	100	98
Sectional Views	96	89	92	92
Auxiliary Views	100	83	92	92
Revolutions	48	34	67	47
Shop Process	36	83	67	58
Dimensions	100	100	100	100
Tolerancing	72	95	83	85
Threads, Fasteners, Springs	60	95	100	82
Reproduction of Drawings	68	78	75	73
Axonometric Projection	80	89	83	84
Oblique Projection	84	83	100	85
Perspective	60	39	67	62
Intersection and Developments	40	61	83	60
Gearing and Cams	16	39	83	36
Electronic Diagrams	16	28	75	36
Structural Drawings	12	17	58	24
Topographic Drawings & Mapping	16	6	42	20
Piping Drawings	20	28	67	29
Welding Representation	20	34	83	35
Graphs and Charts	40	34	34	36
Tool and Die Making	8	6	8	7
Graphical Mathematics	12	17	25	20
Empirical Equations	12	11	17	16

TABLE II

SURVEY RESULTS REGARDING MACHINE DESIGN

NUMBER RESPONDING SAMPLES: 28

RESPONDING SAMPLES	CURRICULUM CONTENT	PER CENT			
		COMM.	UNIV.	TECH.	TOTAL
Community college: 4, 13, 15, 16, 29, 30, 36, 37, 41, 42, 51, 60, 64	Lettering	15	57	29	19
	Sketching	46	57	43	37
	Multiview Projection	38	71	43	44
	Sectional Views	46	71	43	44
	Auxiliary Views	31	86	43	41
University: 2, 6, 12, 17, 20, 25, 38, 50	Revolutions	15	29	14	19
	Shop Process	54	71	71	63
	Dimensions	46	86	57	56
	Tolerancing	62	86	71	74
	Threads, Fasteners, Springs	85	100	57	74
Technical Institute: 21, 28, 32, 44, 48, 65, 67	Reproduction of Drawings	46	57	43	41
	Axonometric Projection	31	43	29	22
	Oblique Projection	15	29	29	15
	Perspective	8	29	14	11
	Intersection and Developments	15	43	29	19
	Gearing and Cams	77	71	71	85
	Electronic Diagrams	23	29	29	11
	Structural Drawings	0	29	14	7
	Topographic Drawings & Mapping	0	0	14	5
	Piping Drawings	23	43	29	19
	Welding Representation	62	29	29	52
	Graphs and Charts	8	57	14	22
	Tool and Die Making	38	43	14	22
	Graphical Mathematics	23	43	43	30
	Empirical Equations	15	0	57	22

TABLE III

SURVEY RESULTS REGARDING TOOL DESIGN 8

NUMBER RESPONDING SAMPLES: 12

RESPONDING SAMPLES

Community College

13, 15, 37, 46, 49

University

11, 12

Technical Institute

21, 28, 32, 48, 67

CURRICULUM CONTENT	PER CENT			
	COMM.	UNIV.	TECH.	TOTAL
Lettering	17	0	0	16
Sketching	67	0	20	42
Multiview Projection	34	0	40	33
Sectional Views	67	0	40	50
Auxiliary Views	67	0	40	50
Revolutions	50	0	0	33
Shop Process	50	100	40	58
Dimensions	67	100	60	58
Tolerancing	67	100	80	83
Threads, Fasteners, Springs	67	50	60	67
Reproduction of Drawings	34	0	20	17
Axonometric Projection	34	0	0	16
Oblique Projection	34	0	0	16
Perspective	50	0	20	17
Intersection and Developments	34	0	20	25
Gearing and Cams	34	0	20	33
Electronic Diagrams	0	0	20	8
Structural Drawings	0	0	0	0
Topographic Drawings & Mapping	0	0	0	0
Piping Drawings	0	0	0	0
Welding Representation	50	50	20	50
Graphs and Charts	34	0	0	8
Tool and Die Making	67	100	100	100
Graphical Mathematics	17	0	0	17
Empirical Equations	17	0	20	17

community colleges favoring sketching, sectional views, auxiliary views, revolutions and perspectives.

In regard to descriptive geometry, Table IV, the data indicates community colleges and universities include most of the curriculum content with the exception of electrical diagrams, structural drawings, and welding representations in their curriculum. Community colleges place no emphasis on oblique projections, gearing and cams, and graphs and charts. Technical institutes favor revolutions and intersections and developments with the other curriculum content not emphasized to any degree of significance.

In regard to Process Piping, Table V, the community colleges were the only group of the three that indicated they offer this area in their curriculum to any significance.

In regard to Aeronautical Drafting, Table VI, only one sample responded with curriculum content, where as in Topography, Table VII, only three samples indicated curriculum content.

The average amount of time (in terms of hours) devoted to each phase of drafting and design curriculum investigated is presented in tabular form in tables designed for this purpose. These tables are headed "Survey Results Regarding Time Spent in . . ." followed by the title of the course. The tables are numbered VIII through XIV. The number of responding samples indicating time spent in each of the course titles is indicated at the top of each table. The number of samples that indicated time (in terms of hours) devoted to each phase of each curriculum is presented in tabular form. A total of the number of hours spent by all samples for each course title within the curriculum was calculated

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TABLE IV

SURVEY RESULTS REGARDING DESCRIPTIVE GEOMETRY 10

NUMBER RESPONDING SAMPLES: 33

RESPONDING SAMPLES

Community College

4, 5, 9, 13, 15, 29, 30, 35, 36, 37, 41, 42, 46, 49, 51, 60, 61, 62, 69

University

1, 12, 17, 20, 47, 58, 63

Technical Institute

18, 21, 34, 44, 45, 48, 67

CURRICULUM CONTENT	PER CENT			
	COMM.	UNIV.	TECH.	TOTAL
Lettering	26	57	0	27
Sketching	21	43	0	21
Multiview Projection	68	86	0	58
Sectional Views	46	29	0	24
Auxiliary Views	74	100	29	70
Revolutions	0	100	43	70
Shop Process	11	14	14	6
Dimensions	11	29	14	12
Tolerancing	53	29	14	15
Threads, Fasteners, Springs	5	29	0	9
Reproduction of Drawings	16	14	14	30
Axonometric Projection	37	14	14	27
Oblique Projection	42	0	0	24
Perspective	37	29	0	27
Intersection and Developments	74	71	33	67
Gearing and Cams	16	0	14	12
Electronic Diagrams	0	0	0	0
Structural Drawings	0	0	0	0
Topographic Drawings & Mapping	26	29	0	21
Piping Drawings	0	14	14	6
Welding Representation	0	0	14	3
Graphs and Charts	26	0	14	18
Tool and Die Making	5	29	0	10
Graphical Mathematics	32	57	14	33
Empirical Equations	11	29	0	15

TABLE V

SURVEY RESULTS REGARDING PROCESS PIPING 11

NUMBER RESPONDING SAMPLES: 9

RESPONDING SAMPLES

Community College

4, 41, 42, 49, 60, 62

University

0

Technical Institute

21, 28, 48

CURRICULUM CONTENT	PER CENT			
	COMM.	UNIV.	TECH.	TOTAL
Lettering	17	0	0	22
Sketching	34	0	34	34
Multiview Projection	34	0	0	11
Sectional Views	17	0	0	11
Auxiliary Views	17	0	0	11
Revolutions	34	0	0	22
Shop Process	34	0	0	22
Dimensions	17	0	0	11
Tolerancing	17	0	0	11
Threads, Fasteners, Springs	17	0	0	11
Reproduction of Drawings	0	0	0	0
Axonometric Projection	34	0	0	22
Oblique Projection	17	0	0	11
Perspective	17	0	0	11
Intersection and Developments	17	0	0	11
Gearing and Cams	0	0	0	0
Electronic Diagrams	34	0	0	22
Structural Drawings	17	0	0	11
Topographic Drawings & Mapping	0	0	0	0
Piping Drawings	67	0	67	67
Welding Representation	50	0	34	44
Graphs and Charts	0	0	0	0
Tool and Die Making	17	0	0	11
Graphical Mathematics	17	0	0	11
Empirical Equations	0	0	34	11

TABLE VI

SURVEY RESULTS REGARDING AERONAUTICAL DRAFTING 12

NUMBER RESPONDING SAMPLES: 1

RESPONDING SAMPLES

Community College

15

University

0

Technical Institute

0

CURRICULUM CONTENT	PER CENT			
	COMM.	UNIV.	TECH.	TOTAL
Lettering	100	0	0	100
Sketching	100	0	0	100
Multiview Projection	100	0	0	100
Sectional Views	100	0	0	100
Auxiliary Views	100	0	0	100
Revolutions	100	0	0	100
Shop Process	0	0	0	0
Dimensions	100	0	0	100
Tolerancing	100	0	0	100
Threads, Fasteners, Springs	100	0	0	100
Reproduction of Drawings	100	0	0	100
Axonometric Projection	100	0	0	100
Oblique Projection	100	0	0	100
Perspective	100	0	0	100
Intersection and Developments	0	0	0	0
Gearing and Cams	0	0	0	0
Electronic Diagrams	0	0	0	0
Structural Drawings	0	0	0	0
Topographic Drawings & Mapping	0	0	0	0
Piping Drawings	0	0	0	0
Welding Representation	0	0	0	0
Graphs and Charts	100	0	0	100
Tool and Die Making	0	0	0	0
Graphical Mathematics	100	0	0	100
Empirical Equations	100	0	0	100

TABLE VII

SURVEY RESULTS REGARDING TOPOGRAPHY

NUMBER RESPONDING SAMPLES: 3

RESPONDING SAMPLES

Community College

4, 41

University

25

Technical Institute

0

CURRICULUM CONTENT	PER CENT			
	COMM.	UNIV.	TECH.	TOTAL
Lettering	0	0	0	0
Sketching	0	0	0	0
Multiview Projection	0	0	0	0
Sectional Views	0	0	0	0
Auxiliary Views	0	0	0	0
Revolutions	0	0	0	0
Shop Process	0	0	0	0
Dimensions	0	0	0	0
Tolerancing	0	0	0	0
Threads, Fasteners, Springs	0	0	0	0
Reproduction of Drawings	0	0	0	0
Axonometric Projection	0	0	0	0
Oblique Projection	0	0	0	0
Perspective	0	0	0	0
Intersection and Developments	0	0	0	0
Gearing and Cams	0	0	0	0
Electronic Diagrams	0	0	0	0
Structural Drawings	50	0	0	34
Topographic Drawings & Mapping	100	100	0	100
Piping Drawings	0	0	0	0
Welding Representation	0	0	0	0
Graphs and Charts	0	0	0	0
Tool and Die Making	0	0	0	0
Graphical Mathematics	50	0	0	34
Empirical Equations	0	0	0	0

and divided by the number of samples to determine the average amount of time.

The list of the participating samples included in Appendix B of this investigation indicated the projected need for drafting and design instructors at the individual schools in the next one, three and five years. The calculated results of the forty-two institutions indicating instructor needs reveal that a total of sixty-one instructors are needed in the next year, eighty-two in the next three years, and eighty-eight in the next five years.

OTHER FINDINGS

A number of the samples indicated curriculum content as related to course title other than that included in the survey form used in the study. The nomenclature was so diverse and inconsistent that the writer believes these data would be of no significant value to this report, and therefore it was not included.

SUMMARY AND CONCLUSIONS

SUMMARY

This investigation was undertaken to determine the content of drafting and design courses at the junior college and university level and the amount of time devoted to the teaching of particular subject matter in each course. Also, the need for instructors in this field was to be determined. Questionnaires designed to supply this information were sent to 159 institutions located throughout the continental United States. A total of seventy questionnaires were returned of which seven indicated they did not offer courses in drafting and design. It was

TABLE VIII

SURVEY RESULTS REGARDING TIME SPENT IN ENGINEERING GRAPHICS

NUMBER RESPONDING SAMPLES INDICATING TIME: 39

CURRICULUM CONTENT	NO. RESPONSES	AVERAGE	RESPONDING SAMPLES
Lettering	32	9	1, 2, 4, 5, 7, 9, 12, 16, 17, 21, 22, 28, 29, 32, 33, 34, 35, 36, 37, 38, 41, 42, 44, 46, 47, 50, 51, 52, 53, 54, 57, 58, 61, 62, 63, 64, 67, 69, 70
Sketching	32	11	
Multiview Projection	38	25	
Sectional Views	37	16	
Auxiliary Views	37	13	
Revolutions	18	10	
Shop Process	20	13	
Dimensions	39	15	
Tolerancing	30	10	
Threads, Fasteners, Springs	31	14	
Reproduction of Drawings	27	5	
Axonometric Projection	31	9	
Oblique Projection	33	7	
Perspective	21	3	
Intersection and Developments	19	21	
Gearing and Cams	12	26	
Electronic Diagrams	13	24	
Structural Drawings	8	62	
Topographic Drawings & Mapping	6	31	
Piping Drawings	10	21	
Welding Representation	14	13	
Graphs and Charts	15	8	
Tool and Die Making	2	10	
Graphical Mathematics	8	13	
Empirical Equations	5	9	

TABLE IX

SURVEY RESULTS REGARDING TIME SPENT IN MACHINE DESIGN

NUMBER RESPONDING SAMPLES INDICATING TIME: 67

CURRICULUM CONTENT	NO. RESPONSES	AVERAGE	RESPONDING SAMPLES
Lettering	3	7	2, 4, 16, 17, 21, 28, 29, 32, 37, 38, 41, 42, 44, 50, 51, 64, 67
Sketching	6	8	
Multiview Projection	5	18	
Sectional Views	5	12	
Auxiliary Views	4	15	
Revolutions	2	3	
Shop Process	11	5	
Dimensions	9	10	
Tolerancing	12	9	
Threads, Fasteners, Springs	11	14	
Reproduction of Drawings	8	49	
Axonometric Projection	4	8	
Oblique Projection	2	4	
Perspective	1	2	
Intersection and Developments	3	6	
Gearing and Cams	12	18	
Electronic Diagrams	4	9	
Structural Drawings	1	1	
Topographic Drawings & Mapping	0	0	
Piping Drawings	2	3	
Welding Representation	8	10	
Graphs and Charts	4	5	
Tool and Die Making	5	12	
Graphical Mathematics	6	12	
Empirical Equations	3	18	

TABLE X

SURVEY RESULTS REGARDING TIME SPENT IN DESIGN

NUMBER RESPONDING SAMPLES INDICATING 8

RESPONDING SAMPLES

11, 21, 28, 36, 37, 46, 64, 67

CURRICULUM CONTENT	#. RESPONSES	AVERAGE
Lettering	0	0
Sketching	2	11
Multiview Projection	1	30
Sectional Views	2	18
Auxiliary Views	2	18
Revolutions	0	0
Shop Process	4	21
Dimensions	4	18
Tolerancing	5	10
Threads, Fasteners, Springs	4	12
Reproduction of Drawings	1	2
Axonometric Projection	0	0
Oblique Projection	0	0
Perspective	0	0
Intersection and Developments	0	0
Gearing and Cams	3	23
Electronic Diagrams	0	0
Structural Drawings	0	0
Topographic Drawings & Mapping	0	0
Piping Drawings	0	0
Welding Representation	3	4
Graphs and Charts	0	0
Tool and Die Making	8	71
Graphical Mathematics	1	30
Empirical Equations	0	0

TABLE XI

SURVEY RESULTS REGARDING TIME SPENT IN DESCRIPTIVE GEOMETRY

NUMBER RESPONDING SAMPLES INDICATING TIME: 21

RESPONDING SAMPLES	CURRICULUM CONTENT	NO. RESPONSES	AVERAGE
5, 11, 12, 17, 21, 29, 34, 35, 36, 37, 41, 42, 44, 46, 51, 58, 61, 62, 63, 67, 69	Lettering	4	3
	Sketching	4	3
	Multiview Projection	14	8
	Sectional Views	4	5
	Auxiliary Views	16	18
	Revolutions	16	38
	Shop Process	1	1
	Dimensions	2	4
	Tolerancing	2	2
	Threads, Fasteners, Springs	1	4
	Reproduction of Drawings	1	3
	Axonometric Projection	6	11
	Oblique Projection	5	9
	Perspective	4	13
	Intersection and Developments	7	23
	Gearing and Cams	2	8
	Electronic Diagrams	0	0
	Structural Drawings	0	0
	Topographic Drawings & Mapping	6	11
	Piping Drawings	1	4
	Welding Representation	0	0
	Graphs and Charts	3	6
	Tool and Die Making	1	2
	Graphical Mathematics	5	12
	Empirical Equations	4	8

TABLE XII

SURVEY RESULTS REGARDING TIME SPENT IN PROCESS PIPING

NUMBER RESPONDING SAMPLES INDICATING TIME: 5

CURRICULUM CONTENT	NO. RESPONSES	AVERAGE	RESPONDING SAMPLES
Lettering	1	3	21, 28, 41, 42, 62
Sketching	2	12	
Multiview Projection	1	6	
Sectional Views	0	0	
Auxiliary Views	0	0	
Revolutions	1	3	
Shop Process	1	3	
Dimensions	0	0	
Tolerancing	0	0	
Threads, Fasteners, Springs	0	0	
Reproduction of Drawings	0	0	
Axonometric Projection	1	3	
Oblique Projection	0	0	
Perspective	0	0	
Intersection and Developments	1	3	
Gearing and Cams	0	0	
Electronic Diagrams	2	71	
Structural Drawings	0	0	
Topographic Drawings & Mapping	0	0	
Piping Drawings	5	46	
Welding Representation	0	0	
Graphs and Charts	0	0	
Tool and Die Making	0	0	
Graphical Mathematics	0	0	
Empirical Equations	1	30	

TABLE XIII

SURVEY RESULTS REGARDING TIME APENT IN AERONAUTICAL DRAFTING

NUMBER RESPONDING SAMPLES INDICATING TIME: 0

RESPONDING SAMPLES 0

CURRICULUM CONTENT	NO. RESPONSES	AVERAGE
Lettering		
Sketching		
Multiview Projection		
Sectional Views		
Auxiliary Views		
Revolutions		
Shop Process		
Dimensions		
Tolerancing		
Threads, Fasteners, Springs		
Reproduction of Drawings		
Axonometric Projection		
Oblique Projection		
Perspective		
Intersection and Developments		
Gearing and Cams		
Electronic Diagrams		
Structural Drawings		
Topographic Drawings & Mapping		
Piping Drawings		
Welding Representation		
Graphs and Charts		
Tool and Die Making		
Graphical Mathematics		
Empirical Equations		

TABLE XIV

SURVEY RESULTS REGARDING TIME SPENT IN TOPOGRAPHY

NUMBER RESPONDING SAMPLES INDICATING TIME: 1

RESPONDING SAMPLES 4

CURRICULUM CONTENT	NO. RESPONSES	AVERAGE
Lettering		
Sketching		
Multiview Projection		
Sectional Views		
Auxiliary Views		
Revolutions		
Shop Process		
Dimensions		
Tolerancing		
Threads, Fasteners, Springs		
Reproduction of Drawings		
Axonometric Projection		
Oblique Projection		
Perspective		
Intersection and Developments		
Gearing and Cams		
Electronic Diagrams		
Structural Drawings	1	48
Topographic Drawings & Mapping	1	16
Piping Drawings		
Welding Representation		
Graphs and Charts		
Tool and Die Making	1	16
Graphical Mathematics	1	16
Empirical Equations		

from the remaining sixty-three that the data for this report was obtained. A critical analysis was made of these data and the results were presented in table form. The need for instructors in the field of drafting and design at the individual institutions is presented in tabular form.

CONCLUSIONS

The results of this report indicate that most instructors of drafting and design include Engineering Graphics in their technology program, and that the curriculum content is consistent with that as indicated in the "curriculum content" portion of the text books used for this study. The analysis also indicated that very few institutions include Machine Design, Tool Design, and Descriptive Geometry as separate courses in their technology programs. Process Piping, Aeronautical Drafting and Topography are only taught on rare occasions as indicated on the tables correlated to these courses. Many instructors indicated they incorporated the subject matter of these courses in the content of "Engineering Graphics."

This investigation also indicates there is a definite need for instructors of drafting and design courses.

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KNOWLEDGE OF YOUTH ABOUT CAREERS IN THE INDUSTRY OF AGRICULTURE.
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ABSTRACT - HIGHLIGHTED IN THIS DOCUMENT ARE THE DATA OBTAINED FROM A PILOT PROGRAM CONDUCTED IN 12 SOUTHWEST VIRGINIA HIGH SCHOOLS TO PROVIDE STUDENTS WITH EXPOSURE TO CAREER OPPORTUNITIES IN AGRICULTURE. A TOTAL OF 5,500 YOUTH AS WELL AS TEACHERS, COUNSELORS, ADMINISTRATORS, AND EXTENSION PERSONNEL ALLIED WITH THE SCHOOLS WERE ALLOWED TO PARTICIPATE. FOR EVALUATION PURPOSES A TEN PERCENT RANDOM SAMPLE OF EVENLY DISTRIBUTED BOY AND GIRL SUBJECTS WERE SURVEYED. THE EVALUATION CENTERED AROUND FOUR QUESTIONS: (1) THE CAREER PLANNING STAGE WHERE YOUTH WERE WHEN THE STUDY WAS CONDUCTED, (2) THEIR KNOWLEDGE OF THE MANY DIVERSE CAREERS ASSOCIATED WITH THE INDUSTRY OF AGRICULTURE, (3) THEIR KNOWLEDGE OF THE EDUCATIONAL REQUIREMENTS NEEDED TO OBTAIN AN AGRICULTURALLY-RELATED CAREER, AND (4) A MEASURE OF THE IMPACT OF THE TOTAL PROGRAM ON THEIR FUTURE CAREER DESIRES. FINDINGS INCLUDED: (1) THE MAJORITY OF STUDENTS HAVE LITTLE OR NO IDEA OF AGRICULTURAL CAREER OPPORTUNITIES BEFORE BEING EXPOSED TO THE PROGRAM, (2) LESS THAN 50 PERCENT OF STUDENTS IN AGRICULTURALLY ORIENTED CLUBS WERE FAMILIAR WITH CAREER OFFERINGS, AND (3) FARM BOYS AND GIRLS HAD A GREATER AWARENESS THAN DID THE OTHER STUDENTS. (AUTHOR/SN)

KNOWLEDGE OF YOUTH ABOUT CAREERS IN

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THE INDUSTRY OF AGRICULTURE

Extension Division
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1673

INTRODUCTION . . .

America's agriculture is the nation's largest industry in terms of numbers of people, investment and production. Few realize that about 3 out of every 10 jobs in the private enterprise sector are related in some way to agriculture. Most people think of agriculture in terms of farming, and consequently, there is little available knowledge on how saleable and appealing the total Industry of Agriculture with its many different careers is in the minds of today's high school youth as they prepare for their occupational future.

To find out how youth thought about their career future in agriculture, an Ad Hoc Committee of the Manpower Development and Training Sub-Committee, Commission of the Industry of Agriculture was formed to carry out an evaluative investigation. This evaluation was conducted in 12 schools located in Bland, Carroll, Grayson, Smyth, and Wythe Counties, and in the City of Galax. All areas were located in Southwest Virginia.

With the aid of school administrators, counselors, teachers, and Cooperative Extension personnel, over 5,500 youth were exposed to an intensive program pointing out the many different careers associated with the Industry of Agriculture. Each was given a brochure which covered the broad career areas, and then shown a series of slides depicting specific career opportunities, followed by a question and answer period. Youth were then asked to record their thoughts and reactions about the learning experience on a short evaluation form.

The evaluation centered around 4 questions: (1) the career planning stage youth were at when the study was conducted, (2) their knowledge of the many and diverse careers associated with the Industry of Agriculture, (3) their knowledge of the educational requirements needed to obtain an agriculturally - related career, and (4) a measure of the impact of the total program exposure on their future career desires.

Traditionally, agriculture has been largely dominated by males. However, with the increased emphasis on marketing, supply, services, and other aspects, there is no reason to hold to or expect this unequal situation to continue. The findings indicated, however, that women were still not conscious of their opportunities in the Industry of Agriculture as yet, and for this reason, the data for boys and girls were analyzed separately.

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From the total, a 10% random sample was drawn and stratified by county, school, grade, and sex. The sample included responses from 275 boys and 278 girls.

The following data represent highlights of the Pilot Program submitted to the Commission of the Industry of Agriculture.

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THE PROGRAM OBJECTIVES . . .

1. To develop a program informing 8-12th grade youth, their parents, and other interested groups about the tremendous opportunity of a career in agricultural production, processing and marketing, and the many service areas upon which agriculture depends.
2. To point out various job opportunities for youth having different educational achievement levels.
3. To present a balanced approach showing agriculturally-related career opportunities for semi-skilled, skilled, technical, and professionally trained people.
4. To indicate the need for knowledgeable workers at the farm production level, and at the same time stress the continuing shift in career opportunities from the production level to conservation and forestry, horticulture, agricultural services and supplies, processing and marketing, and machinery service levels.
5. To form an interest bond and knowledge pool with all concerned individuals, organizations, agencies, institutions, and businesses in helping youth become acquainted with the wide variety of agriculturally-related career opportunities.

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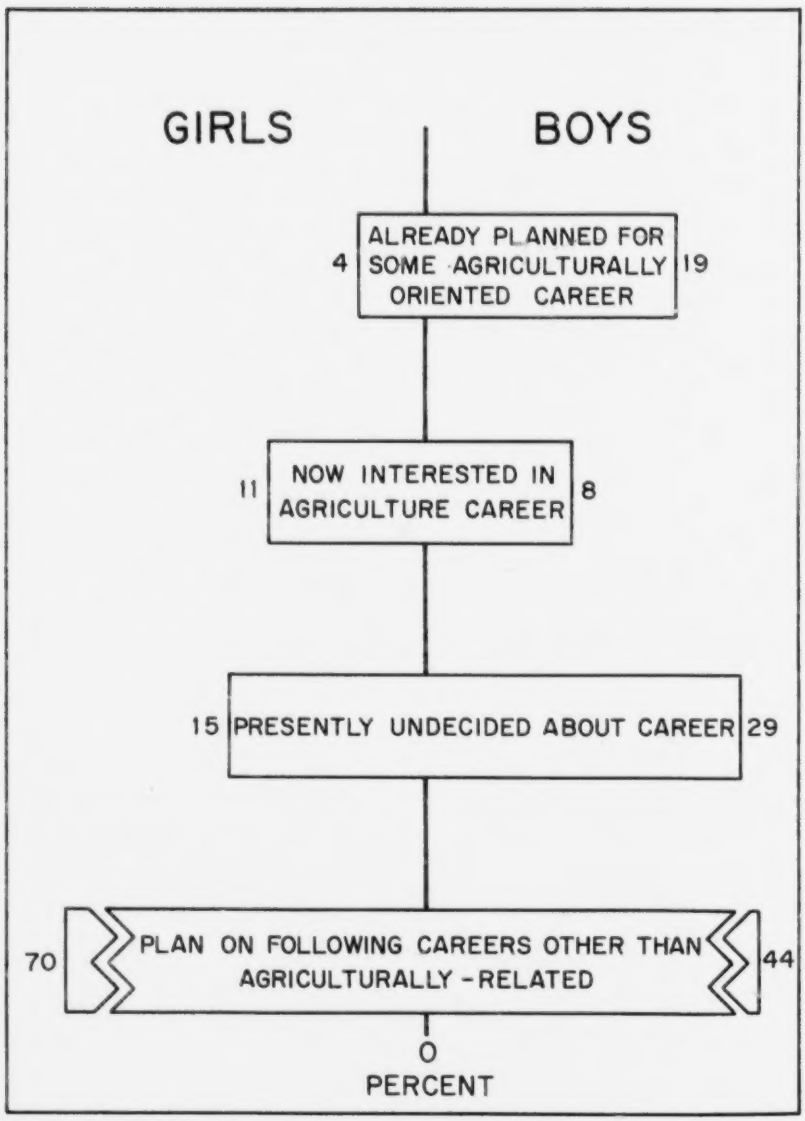
Most career and guidance counselors agree that youth become aware of and begin to explore the career world at about the 7th grade level. By the time they reach high school, many attitudes toward the working world have been formed and tentative career choices made. Although most youth will change their mind several times as they mature and investigate other careers, their current planning does indicate initial areas of career interest.

Youth involved in this study were asked about their future plans as related to agriculturally-oriented careers. Specifically, they were asked whether these plans called for a career in agriculture, whether the program and materials had stimulated an interest in some agriculturally-related career, whether they had planned on following a career other than agriculture, or if at this time they were still undecided as to their future career route. Their planning attitudes and responses by sex are given in the following chart.

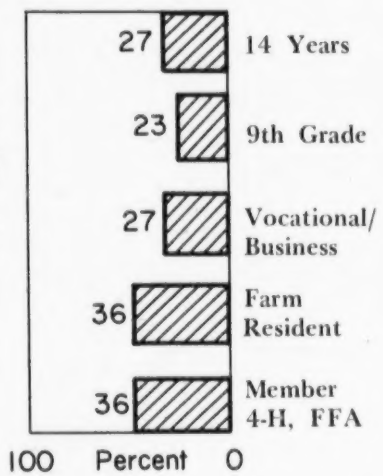
1677

CAREER PLANNING ATTITUDES BY SEX

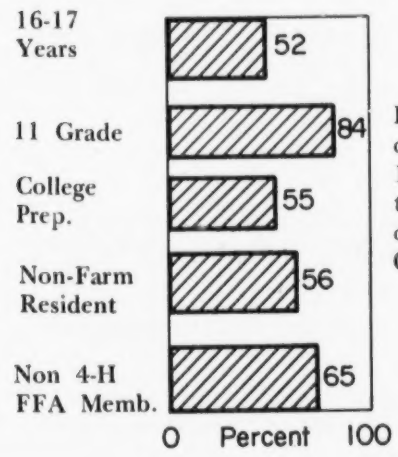


BOYS ALREADY PLANNING FOR AN AGRICULTURALLY RELATED CAREER . . .

Most often, boys planning for agricultural careers were 14 years old, 9th graders, enrolled in a vocational/business course, were farm residents and members of an agriculturally-oriented youth program, 4-H and/or FFA.



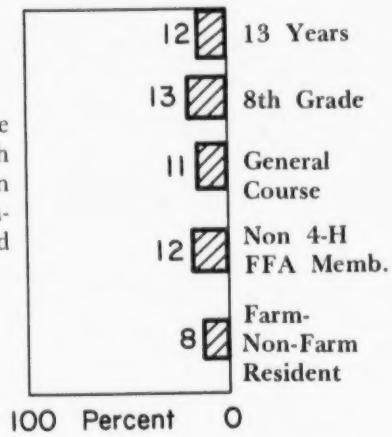
BOYS UNLIKELY TO SEEK AN AGRICULTURALLY RELATED CAREER



Boys least likely to choose an agriculture career were between 16 and 17 years of age, in the 11th grade, taking a college-bound course, lived off the farm, and non-4-H or FFA Club members.

BOYS NOW INTERESTED IN AN AGRICULTURALLY ORIENTED CAREER

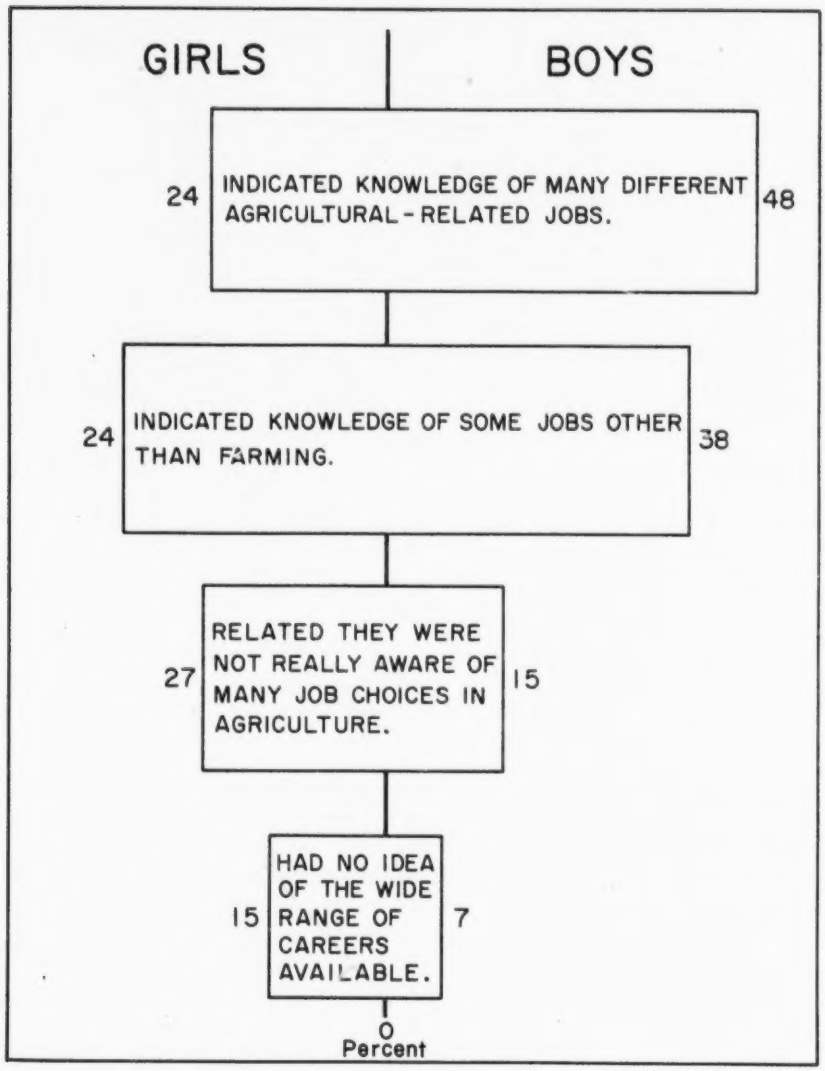
Boys now interested in an agriculture career were 13 years of age, in the 8th grade, enrolled in a general education course, were non-4-H or FFA members and were both rural farm and non-farm residents.



AND FOR GIRLS . . .

Girls preparing for some career in agriculture generally were 15 years of age and under, were enrolled more often in the vocational/business school course, were largely farm residents, and may or may not have been 4-H or FHA members. Girls who were now interested in agriculture as a career showed no real pattern by age, were enrolled in the 8-10th grades, and were taking the vocational/business course. They tended more to be FHA members or non-organizational members and were non-farm residents.

YOUTH ARE UNAWARE OF THE CAREER OPPORTUNITIES IN THE INDUSTRY OF AGRICULTURE



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Although 48% of the boys and 24% of the girls indicated having knowledge of a number of different careers related to the Industry of Agriculture, the majority mentioned only an acquaintance with or had no idea whatsoever of the wide choice of careers available.

For youth associated with 4-H and FFA, who are generally thought of as more agriculturally-oriented than other youth, only 40% of the 4-H and 66% of the FFA members indicated knowledge of a great many different jobs related to agriculture.

Farm boys and girls were more conscious of career opportunities than non-farm boys and girls. However, 10% of the farm boys and 31% of the farm girls stated they were not really aware of the many job choices or had no idea of the wide range of agricultural job opportunities.

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Today's youth apparently are not motivated or presently encouraged to seek out agriculturally-related careers. This lack of desire may be caused by a poor selling or advertising of interest undertaken by the Industry. It may be caused by too heavily emphasized program in only selected major career areas. It may also be that school counsellors are not kept informed by the Industry about the many opportunities available, and consequently have no reliable basis to advise students about possible future career choices.

Yet another reason may be that students themselves are not knowledgeable of the available agriculturally-oriented careers and the different amounts of formal education required for each.

Some felt no openings existed for youth with only elementary training, while others saw no chance in agriculture for those with college degrees. Whatever the reason, it is evident by their responses that youth were not well informed about the amount of schooling needed to secure an agriculturally-related career.

YOUTH LACK KNOWLEDGE ABOUT CAREER OPPORTUNITIES AND EDUCATIONAL REQUIREMENTS . . .

FOR BOYS

60% SAW NO CAREER OPPORTUNITIES FOR PERSONS WITH ONLY ELEMENTARY SCHOOLING.
17% INDICATED NO AGRICULTURALLY-RELATED CAREERS AVAILABLE FOR HIGH SCHOOL GRADUATES.
43% SAW NO OPENINGS FOR POTENTIAL WORKERS WITH BUSINESS SCHOOL TRAINING.
24% FELT THERE WERE NO AGRICULTURALLY-RELATED CAREERS AVAILABLE FOR THOSE WITH VOCATIONAL/TECHNICAL TRAINING.
40% SAW NO CAREER OPPORTUNITIES IN AGRICULTURE FOR COMMUNITY AND JUNIOR COLLEGE GRADUATES.
34% FAILED TO FIND AGRICULTURALLY-RELATED CAREERS FOR THOSE WITH A 4-YEAR COLLEGE DEGREE.

FOR GIRLS . . .

The pattern was the same as described for boys. However, the percentages were somewhat higher in all but the elementary schooling category.

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What was the general reaction of youth towards the short, but intensive, effort to introduce them to the opportunities and careers awaiting them in the vast Industry of Agriculture? In general, the program:

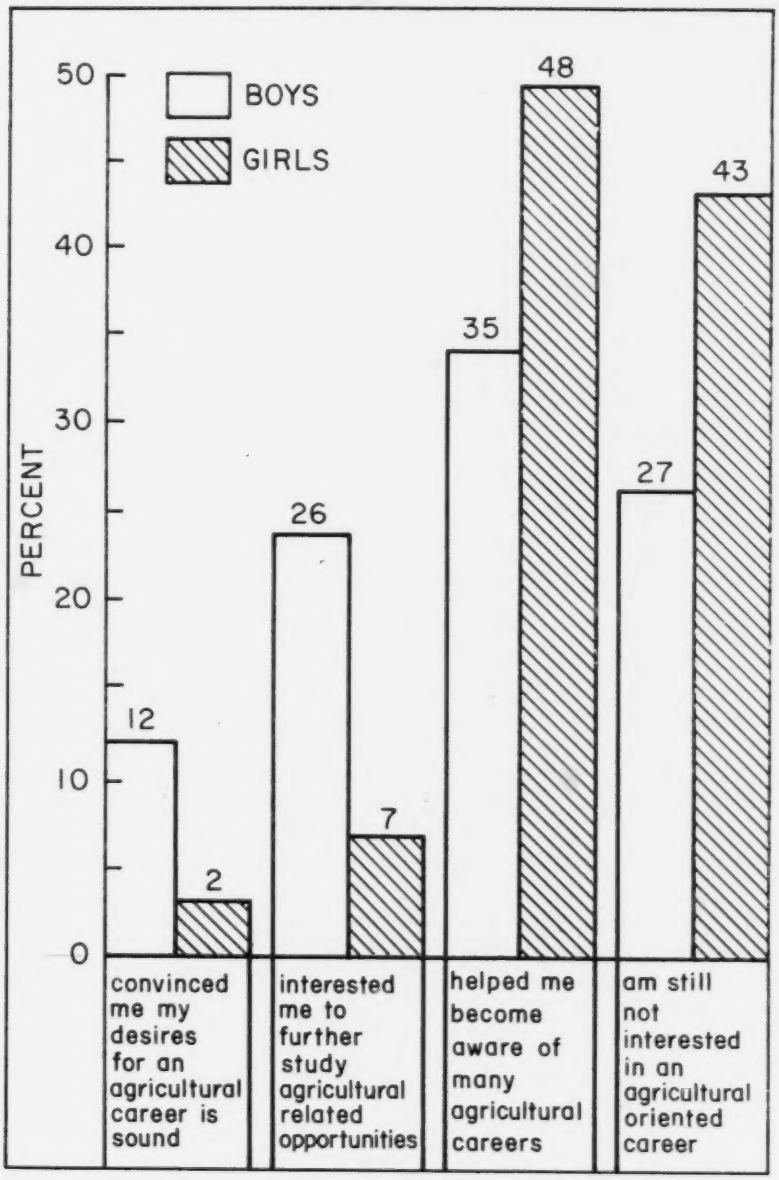
- Convinced 12% of the boys that their desires to follow an agricultural career was sound. It helped 35% to become more aware of the many career choices, and it interested 26% for further study of the Industry as a possible career choice. For girls, 48% indicated a greater awareness of the many different careers, and 7% stated sufficient interest to include agriculturally-related careers as future career choices.

- Opened up some new career ideas for boys enrolled in the Vocational/Business high school curriculum. Sixty-nine percent indicated they now had a specific interest and a greater awareness of agriculturally-related opportunities. This same trend also was evident for Vocational/Business high school girls.

- Interested about one-third of the 4-H and FFA members to pursue further study of agricultural opportunities. About one-fifth of the non-members also indicated a similar desire.

- Interested 33% of the farm boys and 13% of the farm girls to seriously evaluate agriculturally-related opportunities prior to making final career decisions.

PROGRAM REACTIONS . . .



ESTABLISHING BENCHMARKS TO REACH THE PROGRAM OBJECTIVES . . .

The evaluative summary pointed out a serious void in the communication linkage between the vast Industry of Agriculture and the potential youth worker. The majority of youth are still not sure of their career futures. At this impressionistic time in youths' lives the Industry is failing to supply sufficient information to school guidance counsellors, Extension agents, and Vocational Agricultural teachers, to keep them adequately informed so they can counsel with students about the many present and potential agricultural career opportunities.

Today's youth in general are not seriously looking to the Industry of Agriculture as a possible career choice. Presently, both boys and girls under the age of 16 have a greater tendency to plan for some agriculturally-oriented career than those 16 years and over.

Less than 1/2 (44%) of all boys had started exploring careers in areas other than the Industry of Agriculture. This meant that the majority, 56%, were either planning for, interested in, or undecided and could be encouraged to explore seriously agriculture career possibilities.

Even though 1/3 of the boys enrolled in the 3 school curricula (college preparatory, vocational/business, and general) had indicated planning for some career in agriculture, the main source of agriculturally-related workers will come largely from the high school graduate level group.

Most boys planning for an agricultural career were either 4-H or FFA Club members. Boys and girls from a farm background were more likely to seek out an agriculturally-related career than youth from non-farm areas.

As youth matured, they became more aware of the many different careers associated with the Industry of Agriculture. Still, almost 1/4 of the boys and almost 1/2 of the girls indicated no real knowledge of the wide range of agriculturally-oriented careers.

Although 4-H and FFA/FHA Club members and rural farm youth were more aware of available careers than non-members and non-farm youth, their lack of knowledge about career opportunities pointed out a definite need for greater career guidance and emphasis in this broad area.

Youth generally were not aware of specific agricultural careers available at all levels of skill and at all levels of educational accomplishment.

Exposure to the pilot careers program helped convince 12% of the boys that their desires to follow an agriculturally-related career were sound. It interested 26% of the boys and 7% of the girls to study further career possibilities related to the Industry of Agriculture. It also helped 35% of the boys and 48% of the girls to become aware of different career choices.

RESOURCE PERSONS TO WHOM YOUTH INDICATED THEY TURNED FOR INFORMATION ABOUT CAREER OPPORTUNITIES IN AGRICULTURE

	Percent	
Resource Person	Boys	Girls
Agricultural Teacher	40	22
Guidance Counselor	19	41
Extension Agent (Men)	15	14
Extension Agent (Women)	0	1
Father	1	2
Other Relatives and Friends	11	7
Not Interested	14	13

MEMBERS OF THE AD HOC COUNSELING PILOT PROGRAM ON CAREER OPPORTUNITIES IN AGRICULTURE

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Dr. George T. Blume	*Extension Specialist, Training Extension Division, VPI&SU*
Dr. John R. Crunkilton	*Assistant Professor, Agricultural Education, VPI&SU*
Mr. J. A. Hardy (Chairman)	*Assistant Supervisor, Agricultural Education, State Department of Education*
Miss Mary Harris	*Program Leader, Family Resources, Southwest District, Extension Division, VPI&SU*
Dr. Overton R. Johnson	*Assistant Dean, College of Agriculture and Life Sciences, VPI&SU*
Dr. J. E. Oglesby	*Supervisor, Film Production Service, State Department of Education*
Mr. E. Bruce Porter	*Director, Admissions and Records, Wytheville Community College*
Mr. Neel Rich	*Program Leader, 4-H Youth Southwest District, Extension Division, VPI&SU*

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THE ECONOMICS OF WORKING AND LIVING IN NEW YORK CITY.

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DESCRIPTORS - STATISTICAL DATA; *LIVING STANDARDS; *EMPLOYMENT STATISTICS; EMPLOYMENT TRENDS; *JOB MARKET; LABOR FORCE; *SOCIOECONOMIC STATUS; ECONOMIC FACTORS; *ECONOMICS; FAMILY INCOME
IDENTIFIERS - *NEW YORK CITY

ABSTRACT - A COMPILATION OF THE FINDINGS OF ONGOING AND SPECIAL STUDIES CONDUCTED BY THE BUREAU OF LABOR STATISTICS, THIS REPORT HIGHLIGHTS THE OCCUPATIONAL AND SOCIOECONOMIC STATE OF RESIDENTS IN THE NEW YORK CITY AREA. DISCUSSED ARE: (1) CONSUMER PRICES AND EARNINGS, (2) FAMILY BUDGET LEVELS AND INTERAREA COMPARISONS, (3) WELFARE TRENDS, (4) EMPLOYMENT, (5) POPULATION AND LABOR FORCE, AND (6) OCCUPATIONAL PROJECTIONS. (SN)

BLS

REGIONAL REPORT
NUMBER 29
JULY 1972

THE ECONOMICS OF WORKING AND LIVING IN NEW YORK CITY

U.S. DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS
MIDDLE ATLANTIC REGIONAL OFFICE
1515 BROADWAY
NEW YORK NEW YORK 10036

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This report is the twenty-ninth in a series of Regional Reports presenting and analyzing data on various aspects of labor and the economy in the Middle Atlantic Region. Earlier reports in this series are:

No. 1 Profile 90: An Analysis of Pockets of High Unemployment in New York City. August 1963 *

No. 2 Wages 1963: Report on a Survey of Wages, Salaries, and Fringe Benefits for the Standard Metropolitan Statistical Area of New York, New York. October 1963 *

No. 3 Jobs in the New York-Northeastern New Jersey Area. December 1964 *

No. 4 Employment Statistics for the New York-Northeastern New Jersey Metropolitan Area, 1949-64. July 1965 *

No. 5 Seasonally Adjusted Employment Statistics for the New York-Northeastern New Jersey Metropolitan Area, 1949-64. August 1965 *

No. 6 1966 Major Collective Bargaining in the Middle Atlantic States. February 1966 *

No. 7 Post World War II Price Trends in Rent and Housing in the New York-Metropolitan Area. June 1967 *

No. 8 Employment Statistics, 1958-66: A Compilation of Employment Statistics for the Middle Atlantic Region. June 1968 *

No. 9 Labor Force Experience of the Puerto Rican Worker. June 1968

No. 10 Changing Patterns of Employment, Income, and Living Standards in New York City. June 1968 *

No. 11 Professional, Administrative, and Technical Pay in New York, 1968. March 1969 *

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No. 13 Urban Studies Series: Poverty Area Profiles. The Working Age Population - Initial Findings. October 1969 *

No. 14 Urban Studies Series: Poverty Area Profiles. Characteristics of the Unemployed. May 1970 *

No. 15 Professional, Administrative, and Technical Pay in New York, 1969. June 1970 *

No. 16 Wages in the Virgin Islands, 1970. November 1970

No. 17 A Price Index of Operating Costs for Uncontrolled Apartment Houses in New York City. February 1971

No. 18 Professional, Administrative, and Technical Pay in New York, 1970. February 1971

No. 19 Poverty Area Profiles: The New York Puerto Rican: Patterns of Work Experience. May 1971

No. 20 Changing Patterns of Prices, Pay, Workers and Work on the New York Scene. May 1971

No. 21 Poverty Area Profiles: The Job Search of Ghetto Workers. June 1971

No. 22 Poverty Area Profiles: Working Age Nonparticipants: Persons Not in the Labor Force and Their Employment Problems. June 1971

No. 23 Report on the 1971 Price Index of Operating Costs for Uncontrolled Apartment Houses in New York City. July 1971

No. 24 Wages and Benefits of Municipal Government Workers in the City of Newark. November 1971

No. 25 Work Stoppage Trends in the New York-Northeastern New Jersey Area. November 1971

No. 26 Wages and Benefits of Local Government Workers in the New York Area. December 1971

No. 27 Professional, Administrative, and Technical Pay in New York, 1971. February 1972

No. 28 1972 Price Index of Operating Costs for Rent Stabilized Apartment Houses in New York City. July 1972

* Out of print. May be referred to at the Bureau's New York Office.

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THE ECONOMICS OF WORKING AND LIVING IN NEW YORK CITY

U.S. DEPARTMENT OF LABOR
J.D. Hodgson, Secretary

BUREAU OF LABOR STATISTICS
Geoffrey H. Moore, Commissioner

MIDDLE ATLANTIC REGIONAL OFFICE
Herbert Bienstock, Director

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Preface

This report brings together a body of current data relating to employment and unemployment, earnings and prices, welfare and living costs based on the findings of ongoing and special studies of the Bureau of Labor Statistics. Much of the data contained in this report was developed for a presentation which I gave before the New York City Council on Economic Education's Fifth Annual Institute on the New York City Economy, April 19, 1972. The report points to emerging trends and patterns that seem to have some significance for persons concerned with the New York City economy. It reviews both the recent sources of strain such as declining employment and rising unemployment, as well as favorable developments such as the slowdown in consumer price increases, gains in purchasing power for many groups of workers, and the favorable occupational configuration of women in the light of where job opportunities are expected during the seventies, in the white-collar sector.

Information on industrial employment, factory hours and earnings, and job openings are from joint Federal-State programs conducted in cooperation with the New York State Department of Labor and the New Jersey Department of Labor and Industry. Data on occupational projections to 1980 for New York City were developed by the New York State Department of Labor in part using basic assumptions and methodology developed for the BLS national projections.

This report was developed in the Division of Program and Analysis under the direction of Samuel M. Ehrenhalt. The analysis was conducted under the supervision of Jesse Benjamin. Martin Personick played a key role in the preparation of the text and the underlying analysis. Other contributors included Lewis Siegel, Jerald Katzoff, Valerie Sammartino, and Anna June Mueller. Data on payroll employment were compiled under the supervision of Seymour Ehrlich. The charts were prepared by Lillian Bogeinsky.

Herbert Bienstock
Regional Director

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THE ECONOMICS OF WORKING AND LIVING IN NEW YORK CITY

Highlights

... Consumer price increases moderated in 1971 while earnings continued to rise for many groups of workers at a record or near record pace. The employment picture, however, weakened significantly in 1971, following the job slack that had developed a year earlier. 3,613,000 the City's job total in 1971 was 130,000 below the 1970 average and 184,000 lower than two years ago.

... Along with the decline in wage and salary jobs during the past two years, the incidence of unemployment rose. The City's jobless rate increased to 6.7 percent in 1971, up from 4.8 percent in 1970, and 3.6 percent in 1969. The 1971 increase in the City's unemployment was sharper than for the Nation; the U.S. jobless rate increased from 4.9 to 5.9 percent. The sharper-than-national rise in the incidence of unemployment during 1971 parallels the experience of other major central cities.

The following are some additional highlights of the report:

... The private nonmanufacturing sector, a sector of considerable job growth during most of the sixties, lost 75,000 jobs in 1971, about 15,000 of these reflecting work stoppages but 60,000 due to economic

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conditions. All major private sector components, except construction, declined in 1971, with service industry employment registering the first drop since 1950.

... Employed workers in the City's manufacturing industries experienced an improvement in buying power as the pace of consumer prices moderated in 1971. The 5.8-percent CPI rise in 1971 was at a one-fifth slower rate than the 1970 increase of 7.4 percent. By yearend (December 1971), the over-the-year price rise had slowed to 4.6 percent.

... As the slowdown in the rate of retail price increases developed, the City's nearly one-half million factory production workers experienced a gain in average "real" after-tax earnings. Weekly earnings after adjustments for taxes and prices rose nearly 2 percent for a factory worker with three dependents whose earnings were at the average level. This contrasted with the two preceding years when real earnings declined.

... Although consumer price increases slowed in 1971, retail price rises significantly impacted family budget levels over the past several years. By the Autumn of 1971, it took $7,578 at a lower level of living to maintain the four-person family used in calculating the Bureau of Labor Statistics budget level comparisons. This was $1,557 more than in Spring 1967, four and one-half years before. At the intermediate level, budget totals increased by $2,608 since Spring 1967 to $12,585 in Autumn 1971. The higher budget amounted to $19,238 in Autumn 1971, an increase of $4,370 over the four and one-half year span.

... Projected employment developments in New York City point to growth being focused in the service-producing industries. By 1980 close to eight out of every ten workers in New York City are expected to be employed in the service-producing sector. White-collar jobs will account for seven out of every ten job opportunities expected during the seventies, with blue-collar and service jobs accounting for the remaining three out of every ten New York City openings.

... The significant role of women in the New York City labor market was noted with a growth of 4 percent during the period 1960 to 1971, while the number of men declined by 10.5 percent. Projections for the decade of the 1970's indicate a further feminization of the New York job market. Those occupations which traditionally, although not immutably, have been predominantly filled by female workers tend to be those with most job openings indicated for the next decade.

CONSUMER PRICES AND EARNINGS

Consumer price trends

The pace of consumer price increases moderated in 1971. New York-Northeastern New Jersey's 5.8-percent rise in the Consumer Price Index in 1971 was about one-fifth below the 1970 increase of 7.4 percent, and also slightly below the 6.2-percent average price rise in 1968. By December 1971, the New York over-the-year price rise was down to 4.6 percent, and as of May 1972 the rise was 4.2 percent over the year.

As indicated in Chart 1, four of the five major indexes of consumer price change rose more slowly in 1971 than a year earlier in the greater New York area -- food, housing, apparel, and transportation. The health and recreation index, on the other hand, increased more in 1971 than in 1970, reflecting, in part, a sharp rise in medical care prices during the first half of 1971. Despite the recent slowdown, 1971 price increases for most major areas of consumer expenditure were substantially above the annual increases of about 2½ percent averaged between 1960 and 1969.

In 1971, the pace of consumer price advances in New York, 5.8 percent, was more than one-third faster than the 4.3-percent overall increase reported for the Nation. All major components of the Index

Chart 1

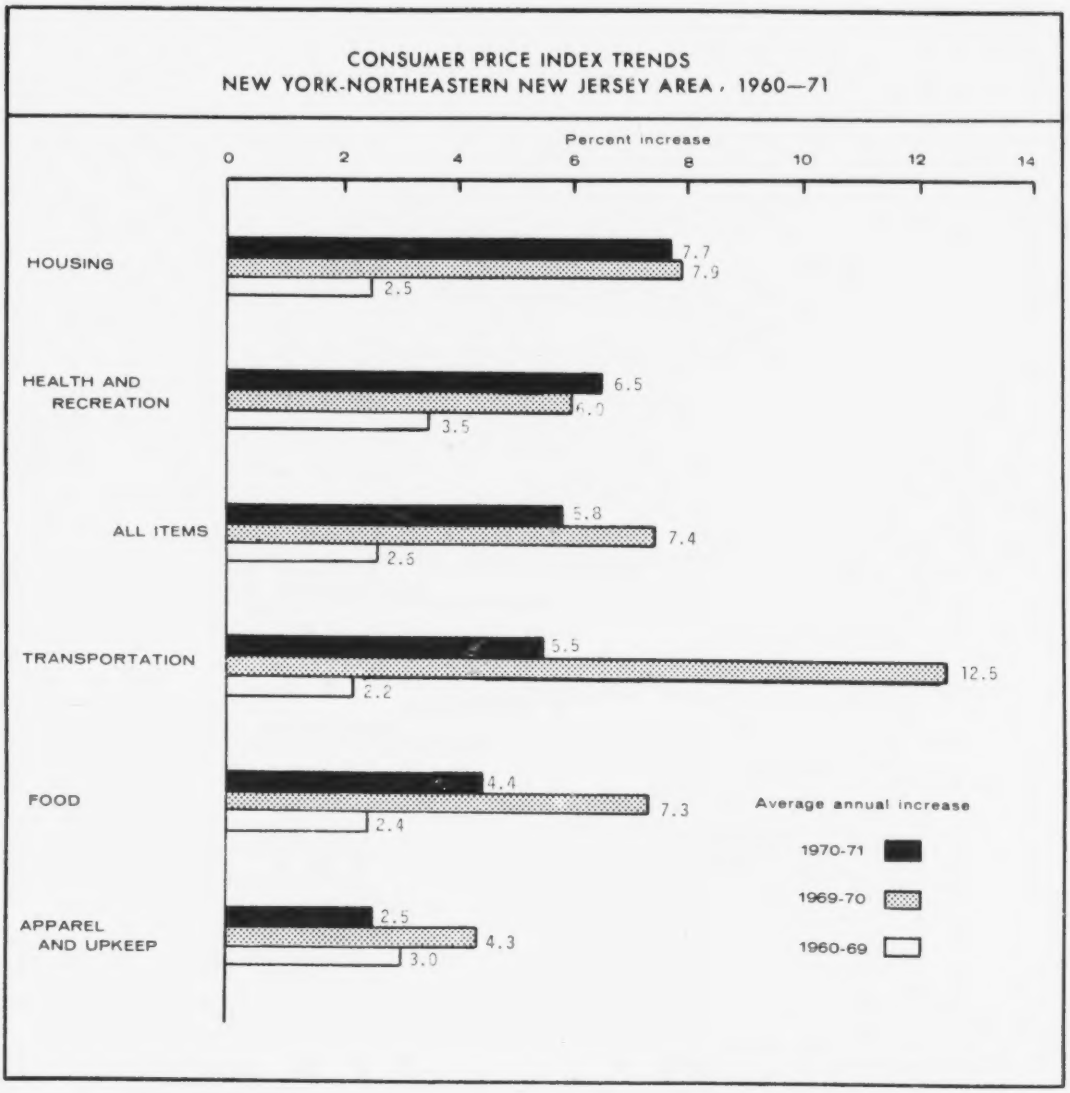
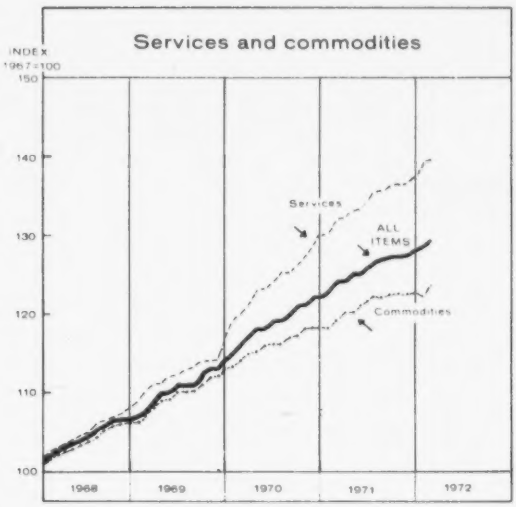
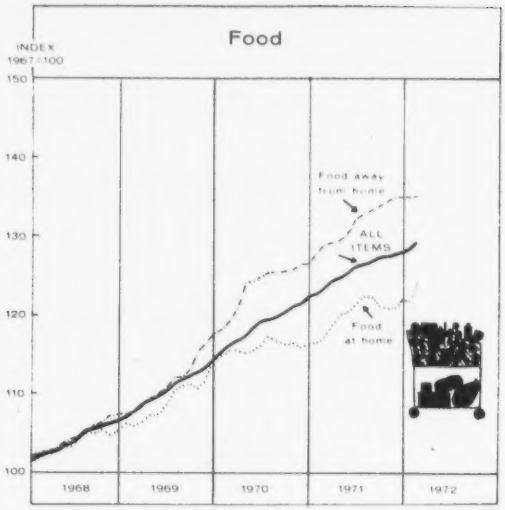
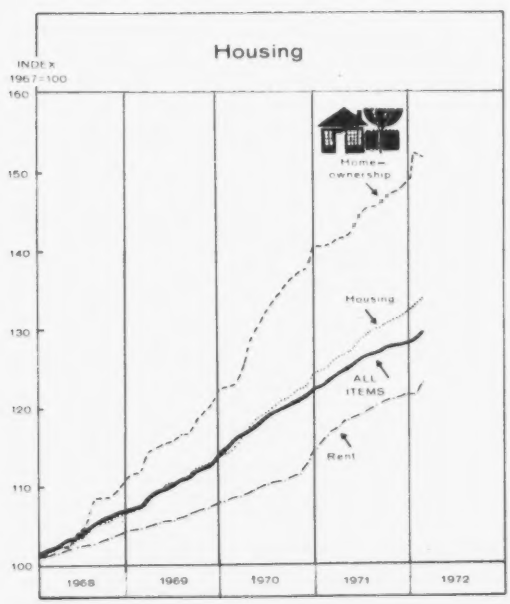

CONSUMER PRICE INDEX TRENDS
NEW YORK-NORTHEASTERN NEW JERSEY AREA, 1960—71
Percent increase
0
2
4
6
8
10
12
14
HOUSING
7.7
7.9
2.5
HEALTH AND RECREATION
6.5
6.0
3.5
ALL ITEMS
5.8
7.4
2.5
TRANSPORTATION
5.5
12.5
2.2
FOOD
4.4
7.3
2.4
APPAREL AND UPKEEP
2.5
4.3
3.0
Average annual increase
1970-71
1969-70
1960-69

Chart 2

CONSUMER PRICE INDEX
NEW YORK-NORTHEASTERN NEW JERSEY, 1968–72







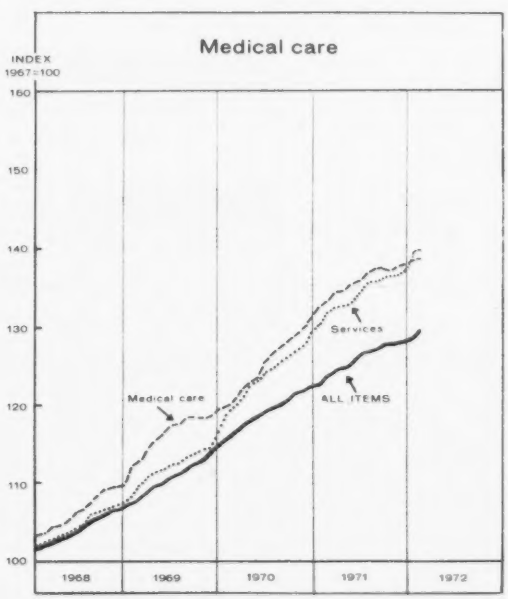


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Chart 3

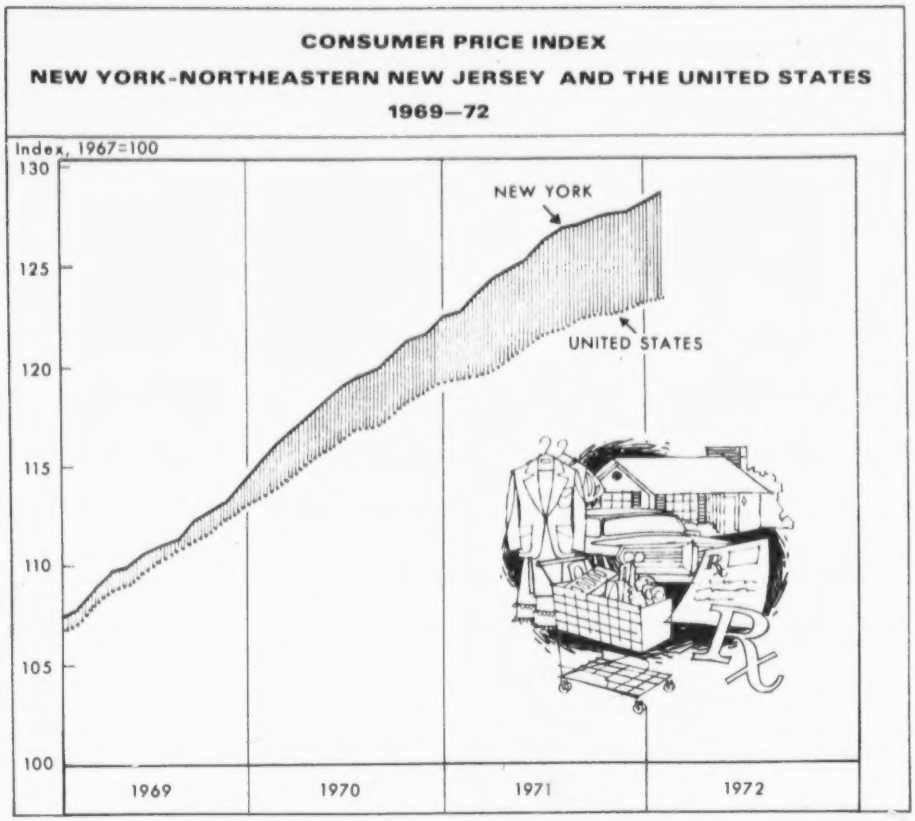

Table 1

Consumer price trends by major component, 1967–71

Item	1970-71		1967-71	
	New York	United States	New York	United States
All items	5.8	4.3	25.9	21.3
Food	4.4	3.0	23.1	18.4
Housing	7.7	4.5	28.7	24.3
Apparel and upkeep	2.5	3.2	20.5	19.8
Transportation	5.5	5.2	29.0	18.6
Health and recreation .	6.5	5.2	26.0	22.2

Table 2

Percent increase in consumer commodity and service prices, 1967–71

Area	All items		Commodities		Services	
	1970-71	1967-71	1970-71	1967-71	1970-71	1967-71
United States	4.3	21.3	3.4	17.4	5.6	28.4
New York-Northeastern New Jersey	5.8	25.9	4.4	21.1	8.1	34.2
Philadelphia	4.8	23.5	3.7	19.5	7.0	31.9
Chicago-Northwestern Indiana	3.9	20.8	3.2	16.7	5.2	28.3
Detroit	3.7	21.7	2.7	16.1	5.1	27.7
Los Angeles	3.7	18.5	3.1	14.1	4.7	26.2

except apparel rose more in New York than they did nationally last year. As a result, the year 1971 saw the gap widen between price increases in the greater New York area and the Nation as a whole -- since 1967, the New York-Northeastern New Jersey CPI has risen 26 percent as against a 21-percent rise in the national index.

In part reflecting the economic stabilization program initiated in mid-1971, the New York area consumer prices during the last half of 1971 rose at about half the rate of increase registered during the first six months of the year -- 1½ percent as against 3 percent (seasonally adjusted). Nationally, seasonally adjusted consumer price increases also totaled about 1½ percent for the last half of 1971, down from the 2-percent increase in the first half.

For both commodities and services, New York area consumers in 1971 continued to experience sharper price increases than those in other major areas across the country as well as for the Nation as a whole. Last year, prices for services in the CPI in New York rose 8.1 percent compared to a 5.6-percent rise nationally and increases in four other major areas ranging from 7.0 percent in Philadelphia to 4.7 percent in Los Angeles.

For commodities, the 4.4-percent increase in New York was higher than the national rise of 3.4 percent as well as above increases ranging between 2.7 and 3.7 percent in Detroit, Los Angeles, Chicago, and Philadelphia. Between 1967 and 1971, New York area commodity and service prices also rose more sharply than for the Nation -- 34 and 21 percent here as against 28 and 17 percent nationally.

Purchasing power

As New Yorkers experienced a slowdown in the rate of retail price increases, many workers in New York City also saw an increase in the purchasing power of their paychecks in 1971. For the City's nearly half-million factory production workers, the year 1971, in contrast to the preceding two years, saw a gain in average "real" after-tax earnings.

Gross earnings of factory production workers rose by a record $9 a week in 1971. After adjustment for Federal income and social security tax deductions as well as the increase in area consumer prices, this was translated into a "real" after-tax pay gain of $1.75, or nearly 2 percent, for the factory worker whose earnings corresponded to the average of all full and part-time manufacturing production workers and who was taxed at rates applicable to a married worker with three dependents. Part of the gain in purchasing power in 1971 reflected the termination of the Federal income tax surcharge.

The increase in buying power of the City's factory production workers in 1971 contrasts with the experience during the last half of the sixties. Between 1965 and 1970, despite a gross weekly pay rise of $29, the average City factory worker with three dependents experienced a $1.23 loss in the buying power of after-tax pay over the five-year span. In the preceding five years 1960-65, in contrast, a $13½ gross weekly pay rise resulted in a $7.12 increase in "real" take-home pay for this category of workers.

Chart 4

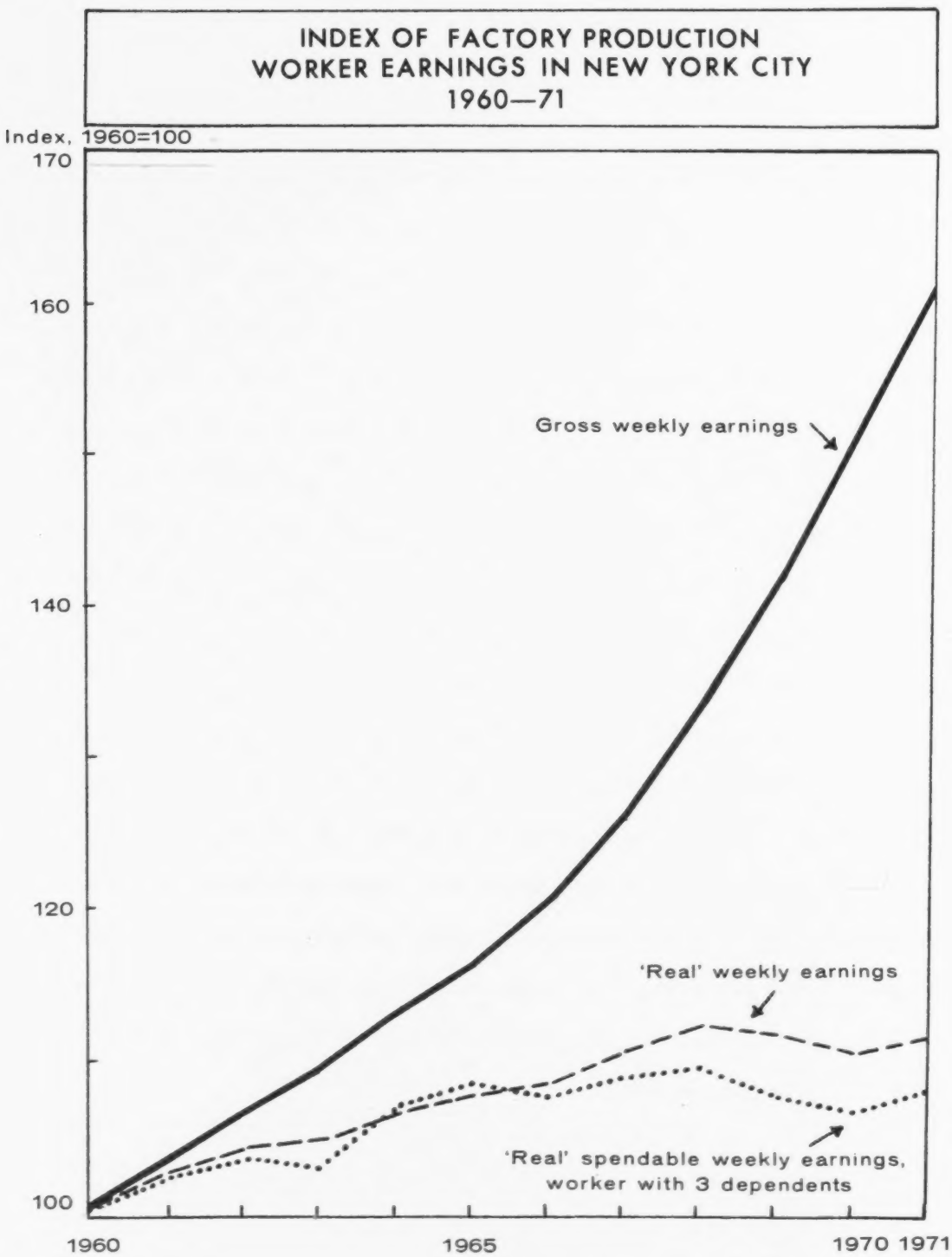
INDEX OF FACTORY PRODUCTION
WORKER EARNINGS IN NEW YORK CITY
1960—71
Index, 1960=100
170
160
140
120
100
Gross weekly earnings
'Real' weekly earnings
'Real' spendable weekly earnings,
worker with 3 dependents
1960
1965
1970 1971

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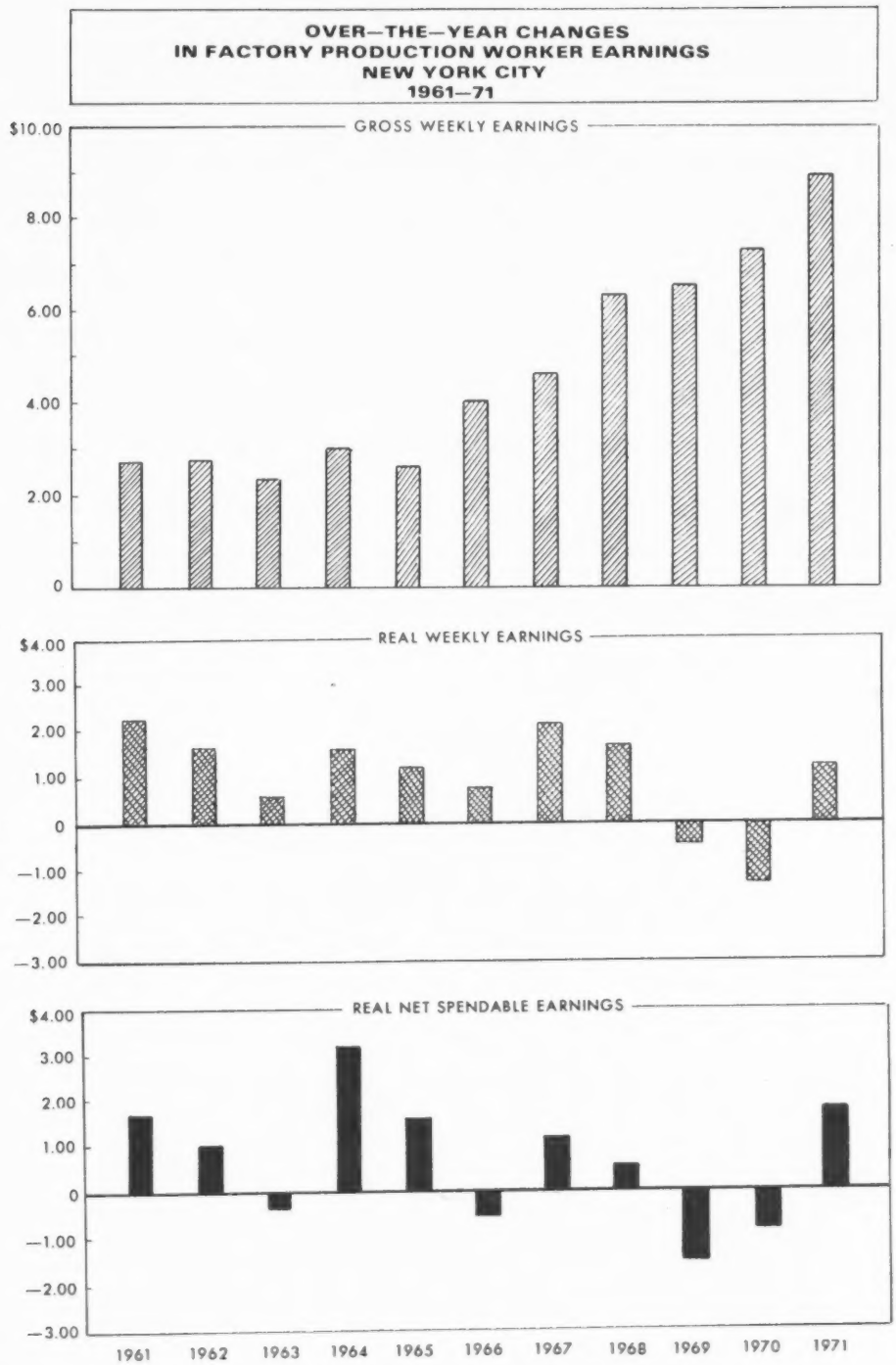
Chart 5



NOTE: Gross weekly earnings data cover all production and related workers in New York City's manufacturing industries; "real" earnings reflect gross weekly pay after adjustment for changes in the New York-Northeastern New Jersey Consumer Price Index (CPI); "real" net spendable earnings are computed by adjusting the gross pay average for all factory production workers by Federal tax rates applicable to a married worker with three dependents as well as for changes in the (CPI).

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Factory worker earnings trends

Weekly earnings of New York City's factory production workers averaged $136 in 1971, about $9, or 7 percent higher than in 1970. The 1971 increase was the largest on record. Although the New York City average was below the $142 national figure, reflecting largely the differences in industry composition, the differential narrowed significantly during the past two years, as a result of relatively sharper hourly pay increases in New York City as well as smaller cutbacks in the City's factory workweek. Record hourly pay increases for City factory workers during the past two years lifted the City's hourly average above the national figure. In 1971, City factory workers averaged $3.63 an hour compared to $3.57 hourly for their national counterparts.

Table 3

Comparative trends in average earnings and hours of production and related workers in manufacturing industries New York City and the United States, annual averages, 1950—71

(Index: 1950=100)

Year	Average weekly earnings					Average hourly earnings					Average weekly hours		
	United States		New York City		New York City-United States differential	United States		New York City		New York City-United States differential	United States	New York City	New York City-United States differential
	Amount	Index	Amount	Index		Amount	Index	Amount	Index				
1950	$58.32	100	$59.03	100	$ .71	$1.44	100	$1.57	100	$ 0.13	40.5	37.6	-2.9
1951	63.34	109	63.13	107	- .21	1.56	108	1.67	106	.11	40.6	37.8	-2.8
1952	67.16	115	65.53	111	-1.63	1.65	115	1.72	110	.07	40.7	38.1	-2.6
1953	70.47	121	67.46	114	-3.01	1.74	121	1.78	113	.04	40.5	37.9	-2.6
1954	70.49	121	68.82	117	-1.67	1.78	124	1.84	117	.06	39.6	37.4	-2.2
1955	75.70	130	71.82	122	-3.88	1.86	129	1.89	120	.03	40.7	38.0	-2.7
1956	78.78	135	74.86	127	-3.92	1.95	135	1.97	125	.02	40.4	38.0	-2.4
1957	81.59	140	77.29	131	-4.30	2.05	142	2.05	130	0	39.8	37.7	-2.1
1958	82.71	142	79.65	135	-3.06	2.11	147	2.13	136	.02	39.2	37.4	-1.8
1959	88.26	151	83.04	141	-5.22	2.19	152	2.18	139	- .01	40.3	38.1	-2.2
1960	89.72	154	84.36	143	-5.36	2.26	157	2.26	144	0	39.7	37.3	-2.4
1961	92.34	158	87.10	148	-5.24	2.32	161	2.34	149	.02	39.8	37.3	-2.5
1962	96.56	166	89.86	152	-6.70	2.39	166	2.38	152	- .01	40.4	37.8	-2.6
1963	99.63	171	92.25	156	-7.38	2.46	171	2.46	157	0	40.5	37.5	-3.0
1964	102.97	177	95.25	161	-7.72	2.53	176	2.54	162	.01	40.7	37.5	-3.2
1965	107.53	184	97.88	166	-9.65	2.61	181	2.61	166	0	41.2	37.5	-3.7
1966	112.34	193	101.95	173	-10.39	2.72	189	2.69	171	- .03	41.3	37.9	-3.4
1967	114.90	197	106.60	181	-8.30	2.83	197	2.82	180	- .01	40.6	37.8	-2.8
1968	122.51	210	112.94	191	-9.57	3.01	209	2.98	190	- .03	40.7	37.9	-2.8
1969	129.51	222	119.51	202	-10.00	3.19	222	3.17	202	- .02	40.6	37.7	-2.9
1970	133.73	229	126.82	215	-6.91	3.36	233	3.40	217	.04	39.8	37.3	-2.5
1971	142.44	244	135.76	230	-6.68	3.57	248	3.63	231	.06	39.9	37.4	-2.5

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Table 4

Average hourly earnings of production and related workers in manufacturing industries New York City and 45 metropolitan areas, 1950—70

Area	Manufacturing employment 1970 (in thousands)	Average hourly earnings						1950-60 increase		1960-70 increase	
		Amount			Rank			Amount	Percent	Amount	Percent
		1950	1960	1970	1950	1960	1970				
Detroit	558	$1.80	$2.92	$4.38	1	1	1	$1.12	62	$1.46	50
San Francisco-Oakland	203	1.71	2.79	4.25	2	3	2	1.08	63	1.46	52
Portland (Oreg.)	86	1.68	2.53	3.80	3	11	8	.85	51	1.27	50
Pittsburgh	278	1.62	2.80	3.79	4	2	9	1.18	73	.99	35
Los Angeles-Long Beach	816	1.62	2.59	3.66	5	9	12	.97	60	1.07	41
Buffalo	169	1.61	2.69	3.92	6	6	7	1.08	67	1.23	46
Sacramento	22	1.60	2.75	4.10	7	4	4	1.15	72	1.35	49
San Diego	68	1.60	2.73	4.12	8	5	3	1.13	71	1.39	51
Wilmington	69	1.59	2.60	3.79	9	8	10	1.01	64	1.19	46
New York City	766	1.57	2.26	3.40	10	30	23	.69	44	1.14	50
New York-Northeastern New Jersey	1,666	1.55	2.32	3.44	11	25	19	.77	50	1.12	48
Newark	248	1.54	2.39	3.47	12	18	17	.85	55	1.08	45
San Jose	126	1.53	2.65	4.00	13	7	5	1.12	73	1.35	51
Rochester (Monroe County)	131	1.52	2.48	4.00	14	13	6	.96	63	1.52	61
Wichita	39	1.51	2.50	3.42	15	12	21	.99	66	.92	37
Perth Amboy	115	1.51	2.44	3.58	16	16	13	.93	62	1.14	47
Paterson-Clifton-Passaic	188	1.50	2.38	3.45	17	20	18	.88	59	1.07	45
Trenton	39	1.50	2.35	3.41	18	23	22	.85	57	1.06	45
Erie	43	1.49	2.39	3.44	19	19	20	.90	60	1.05	44
Philadelphia	548	1.49	2.38	3.54	20	21	14	.89	60	1.16	49
Minneapolis-St. Paul	208	1.48	2.45	3.72	21	15	11	.97	66	1.27	52
Waterbury	37	1.48	2.32	3.22	22	26	34	.84	57	.90	39
Binghamton	43	1.48	2.14	3.33	23	33	29	.66	45	1.19	56
Kansas City	126	1.46	2.44	3.28	24	17	31	.98	67	.84	34
Phoenix	70	1.45	2.46	3.36	25	14	26	1.01	70	.90	37
Reading	57	1.44	2.02	3.09	26	37	35	.58	40	1.07	53
Baltimore	196	1.43	2.38	3.52	27	22	15	.95	66	1.14	48
Salt Lake City	30	1.43	2.35	3.25	28	24	32	.92	64	.90	38
Utica-Rome	40	1.43	2.20	3.23	29	32	33	.77	54	1.03	47
Tulsa	42	1.38	2.29	3.38	30	27	24	.91	66	1.09	48
Allentown-Bethlehem-Easton	105	1.38	2.28	3.33	31	28	30	.90	65	1.05	46
New Haven	43	1.36	2.28	3.48	32	29	16	.92	68	1.20	53
Birmingham	73	1.35	2.54	3.37	33	10	25	1.19	88	.83	33
Knoxville	48	1.31	2.12	3.06	34	34	38	.81	62	.94	44
Harrisburg	40	1.30	2.03	3.09	35	36	36	.73	56	1.06	52
Lancaster	56	1.26	1.98	3.09	36	39	37	.72	57	1.11	56
New Orleans	54	1.25	2.23	3.35	37	31	28	.98	78	1.12	50
Memphis	60	1.25	2.01	3.02	38	38	39	.76	61	1.01	50
Atlanta	120	1.22	2.07	3.36	39	35	27	.85	70	1.29	62
York	62	1.22	1.89	2.98	40	42	41	.67	55	1.09	58
Nashville	62	1.21	1.95	2.93	41	40	42	.74	61	.98	50
Chattanooga	53	1.21	1.90	2.93	42	41	43	.69	57	1.03	54
Scranton	34	1.17	1.77	2.80	43	44	44	.60	51	1.03	58
Charlotte	42	1.16	1.67	2.59	44	46	46	.51	44	.92	55
Wilkes-Barre	53	1.15	1.70	2.74	45	45	45	.55	48	1.04	61
Tampa-St. Petersburg	54	1.08	1.83	3.01	46	43	40	.75	69	1.18	64

Historically, factory hours of work in New York City have quite consistently averaged between two and three hours below the national figures during the fifties and sixties. In 1970 and 1971, weekly factory hours averaged 2.5 hours less in New York City than for the Nation, but this was the smallest difference for any year since 1961. The shorter workweek in New York City is traceable largely to its industrial structure, particularly the high relative importance of the apparel and printing industries, since shorter-than-average basic workweek schedules are prevalent among establishments in these industry groups.

Looking at hourly factory earnings trends for New York City and 45 major metropolitan areas over the past two decades, it can be noted that New York City and six other areas showed larger hourly pay gains in manufacturing during the sixties than over the fifties. Hourly pay gains for City factory workers rose by 50 percent, from $2.26 in 1960 to $3.40 in 1970; for the earlier decade, the City rise totaled 44 percent.

After experiencing one of the sharpest declines in relative hourly earnings rank among the 46 areas between 1950 and 1960 -- from 10th place to 30th -- New York City improved its position during the decade of the sixties, rising from 30th place in 1960 to 23rd in 1970. Other areas whose relative standing also rose included New York-Northeastern New Jersey, Rochester, Philadelphia, Baltimore, New Haven, and Atlanta. As in 1960, Detroit, San Francisco, Sacramento, and San Diego were again among the top five earnings areas, while Pittsburgh was replaced by San Jose.

Table 5

Manufacturing employment by relative hourly earnings, 1966—71

Industry group	Production and related workers December 1971			All employees (in thousands)		Employment change 1966-1971	
	Average weekly earnings	Average weekly hours	Average hourly earnings	1966	1971	Number	Percent
Total manufacturing 1/	$140.62	37.8	$3.72	863.7	691.5	-172.2	- 19.9
Industries with higher earnings 2/ December 1971 average hourly earnings of $4.10 or more							
TOTAL	-	-	-	230.4	196.7	- 33.7	- 14.6
Printing and publishing	227.17	36.7	6.19	125.4	110.0	- 15.4	- 12.3
Food and kindred products	173.26	40.2	4.31	62.4	51.2	- 11.2	- 17.9
Chemicals and allied products	180.40	44.0	4.10	42.6	35.5	- 7.1	- 16.7
Industries with intermediate earnings 2/ December 1971 average hourly earnings of $3.35-$4.09							
TOTAL	-	-	-	436.0	341.2	- 94.8	- 21.7
Primary metal industries	157.03	41.0	3.83	14.2	12.0	- 2.2	- 15.5
Transportation equipment	149.74	39.2	3.82	10.3	7.6	- 2.7	- 26.2
Machinery, except electrical	151.18	40.1	3.77	30.3	22.0	- 8.3	- 27.4
Instruments and related products	148.90	39.6	3.76	23.4	17.2	- 6.2	- 26.5
Stone, clay, and glass products	151.25	41.1	3.68	9.5	7.3	- 2.2	- 23.2
Lumber and wood products	154.14	42.0	3.67	5.8	4.8	- 1.0	- 17.2
Fabricated metal products	143.67	40.7	3.53	37.8	32.9	- 4.9	- 13.0
Paper and allied products	137.02	40.3	3.40	27.3	21.6	- 5.7	- 20.9
Textile mill products	132.10	39.2	3.37	37.4	31.5	- 5.9	- 15.8
Apparel and other textile products	117.94	35.1	3.36	238.0	184.3	- 53.7	- 22.6
Industries with lower earnings 2/ December 1971 average hourly earnings of $3.34 or less							
TOTAL	-	-	-	184.5	142.8	- 41.7	- 22.6
Electrical machinery	126.47	39.4	3.21	52.5	40.6	- 11.9	- 22.7
Furniture and fixtures	123.77	38.8	3.19	17.9	14.7	- 3.2	- 17.9
Miscellaneous manufacturing industries	118.56	37.4	3.17	71.5	55.2	- 16.3	- 22.8
Rubber and miscellaneous plastics products	120.13	41.0	2.93	11.9	9.3	- 2.6	- 21.8
Leather and leather products	104.98	37.9	2.77	30.7	23.0	- 7.7	- 25.1

1/ In addition to the industries shown, includes three industries with total employment of 11,500, for which no separate earnings data are available.

2/ "Higher earnings" and "lower earnings" represent those exceeding or falling below the all-manufacturing average by more than 10 percent.

Table 6

Number of business establishments 1/ by employment size
New York City, March 1960—70

Industry	Total establishments 1970	Change 1960-70			
		All establishments	0-9	10-99	100 and over
Total 2/3/	190,635	-29,447	-27,701	-1,889	143
Manufacturing	27,010	- 9,261	- 5,556	-3,537	-168
Contract construction ...	8,832	- 2,261	- 2,055	- 202	- 4
Transportation and public utilities	6,486	- 613	- 803	145	45
Trade	66,292	-12,896	-13,307	374	37
Wholesale trade	23,773	- 4,653	- 4,339	- 335	21
Retail trade	42,519	- 8,244	- 8,968	709	16
Finance, insurance and real estate	29,508	- 1,097	- 1,411	257	57
Services	50,926	- 4,804	- 2,513	-2,467	176

1/ Establishments covered by New York State unemployment insurance.
2/ Total includes mining and unclassified establishments not shown separately.
3/ Excludes private households (SIC 88) which were not covered by unemployment insurance in 1960.

Table 7

Distribution of New York City establishments by employment size, 1970

Industry	All establishments	0-9	10-99	100 and over
Total	100.0	77.9	20.1	2.0
Manufacturing	100.0	49.6	45.7	4.7
Contract construction	100.0	77.9	20.2	1.9
Transportation and public utilities	100.0	68.2	26.5	5.3
Trade	100.0	80.3	18.6	1.1
Wholesale trade	100.0	73.7	24.8	1.5
Retail trade	100.0	84.1	15.0	.9
Finance, insurance and real estate	100.0	88.1	10.1	1.8
Services	100.0	84.7	13.7	1.5

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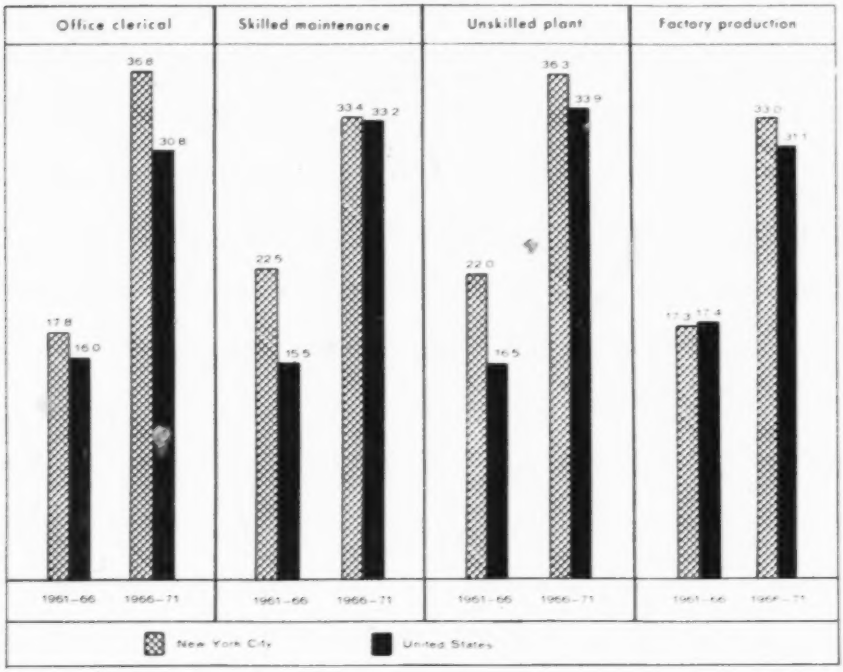
Chart 6

PERCENT INCREASE IN AVERAGE EARNINGS FOR SELECTED OFFICE AND PLANT WORKERS
UNITED STATES AND NEW YORK CITY
1961–66 AND 1966–71



Clerical and indirect plant worker pay

Significant pay gains were reported for New York City service, plant and office workers in a cross-section of New York City private industry in 1971. Earnings for office clerical workers were up 6.9 percent between April 1970 and April 1971, while for skilled maintenance and unskilled plant jobs (including janitors, porters, and cleaners, as well as material handling laborers) the over-the-year pay gains were 6.6 and 6.7 percent, respectively. Although 1971 earnings rises for each

group were below record increases of the previous two years, they were well above the average annual increases of 3½-4 percent reported between 1961 and 1968.

Despite the slowdown, increases in area consumer prices in 1971 continued to limit the purchasing power of the earnings gains for these occupational groups. After adjustment for the impact of a 5.5-percent price rise between April 1970 and April 1971, real earnings were up only 0.9 percent for office clerical workers over the year, compared to the 6.9-percent rise reported in straight-time earnings for this group. For skilled maintenance and custodial and material movement workers, real pay increases totaled only 0.7 and 0.8 percent in 1971. Buying power gains last year, as was the case in 1969 and 1970, for office clerical and blue-collar groups were smaller than the average annual increase of about 1½ percent registered between 1961 and 1968, as price increases of about 6 percent in 1971 and 1969 and of over 7 percent in 1970 were substantially above the average price rise of about 2½ percent experienced in the greater New York area during the seven-year span 1961-1968.

FAMILY BUDGET LEVELS AND INTERAREA COMPARISONS

While the Consumer Price Index measures changes in retail prices for a representative market basket of about 400 goods and services, the Bureau also publishes data on urban family budgets designed to measure the annual budget totals at three levels. The budgets are widely used to measure interarea differences in living costs.

The annual budget of maintaining an intermediate level of living for a specifically defined family of four persons in the New York-Northeastern New Jersey area was reported at $12,585 in Autumn 1971. At the lower level of living, the budget came to $7,578 while at a higher level of living, it amounted to $19,238.

At all three levels, the totals were higher in Autumn 1971 than they were in Spring 1970, the last time the budget was priced. The total budget increased 5.5 percent at the lower level over this period and 3.7 percent at both the intermediate and higher levels. The rise primarily reflected increases in area consumer prices, which more than offset a decrease in personal income tax payments resulting from reductions in Federal income tax liability as provided in the 1970 Tax Reform Act. The larger increase in the lower budget in part resulted from the impact of increases in housing and medical care components.

Dollar totals in New York-Northeastern New Jersey in 1971 were higher than the United States urban average for all three budget levels.

Table 8

Changes in budget costs for a four-person family at three levels of living urban United States, Spring 1967-Autumn 1971

Component	Costs			Change			
	Autumn 1971	Spring 1970	Spring 1967	Spring 1970-Autumn 1971		Spring 1967-Autumn 1971	
				Amount	Percent	Amount	Percent
Lower level							
Total budget	$7,214	$6,960	$5,915	$254	3.6	$1,299	22.0
Total family consumption	5,941	5,553	4,862	288	5.2	979	20.1
Food	1,944	1,805	1,644	59	3.1	320	19.5
Housing	1,516	1,429	1,303	87	6.1	213	16.3
Transportation	536	505	446	31	6.1	90	20.2
Clothing and personal care	848	807	700	41	5.1	148	21.1
Medical care	609	562	474	47	8.4	135	28.5
Other family consumption	368	345	295	23	6.7	73	24.7
Personal income tax	629	719	473	-90	-12.5	156	33.0
All other 1/	744	688	580	56	8.1	164	28.3
Intermediate level							
Total budget	$10,971	$10,664	$9,076	$307	2.9	$1,895	20.9
Total family consumption	8,626	8,205	7,221	421	5.1	1,405	19.5
Food	2,532	2,452	2,105	80	3.3	427	20.3
Housing	2,638	2,501	2,230	137	5.5	408	18.3
Transportation	964	912	872	52	5.7	92	10.6
Clothing and personal care	1,196	1,137	985	59	5.2	211	21.4
Medical care	612	564	477	48	8.5	135	28.3
Other family consumption	684	639	552	45	7.0	132	23.9
Personal income tax	1,266	1,333	1,067	-167	-10.9	304	28.6
All other 1/	979	926	793	53	5.7	186	23.5
Higher level							
Total budget	$15,905	$15,511	$13,060	$394	2.6	$2,855	27.9
Total family consumption	11,935	11,346	9,963	589	5.2	1,972	19.8
Food	3,198	3,092	2,586	106	3.4	612	23.7
Housing	3,980	3,772	3,340	208	5.5	640	19.2
Transportation	1,250	1,183	1,127	67	5.7	123	10.9
Clothing and personal care	1,740	1,655	1,446	85	5.1	294	20.3
Medical care	638	589	497	50	8.5	141	28.4
Other family consumption	1,129	1,056	967	73	6.9	162	16.8
Personal income tax	2,614	2,875	1,969	-261	-9.1	645	32.8
All other 1/	1,356	1,290	1,128	66	5.1	228	27.1

1/ Including gifts and contributions, personal life insurance, occupational expenses, and social security and disability payments.

NOTE: The family consists of an employed husband, age 38, a wife not employed outside the home, an 8-year old girl, and a 13-year old boy.

Table 9

Changes in budget costs for a four-person family at three levels of living New York-Northeastern New Jersey, Spring 1967-Autumn 1971

Component	Costs			Change			
	Autumn 1971 1/	Spring 1970 1/	Spring 1967	Spring 1970-Autumn 1971		Spring 1967-Autumn 1971	
				Amount	Percent	Amount	Percent
Lower level							
Total budget	$7,578	$7,183	$6,021	$395	5.5	$1,557	25.9
Total family consumption	6,104	5,693	4,919	411	7.2	1,185	24.1
Food	2,282	2,091	1,758	111	5.3	444	25.3
Housing	1,510	1,383	1,238	127	9.2	272	22.0
Transportation	460	433	370	27	6.2	90	24.3
Clothing and personal care	854	811	732	43	5.3	122	16.7
Medical care	668	598	510	70	11.7	158	31.0
Other family consumption	410	377	311	33	8.8	99	31.8
Personal income tax	697	779	503	-82	-10.5	194	38.6
All other 2/	777	711	599	66	9.3	178	29.7
Intermediate level							
Total budget	$12,585	$12,134	$9,977	$451	3.7	$2,608	26.1
Total family consumption	9,777	9,178	7,857	599	6.5	1,920	24.4
Food	2,943	2,792	2,330	151	5.4	613	26.3
Housing	3,273	3,071	2,637	202	6.6	636	24.1
Transportation	918	865	771	53	6.1	147	19.1
Clothing and personal care	1,212	1,151	1,024	61	5.3	188	18.4
Medical care	670	600	512	70	11.7	158	30.9
Other family consumption	761	699	583	62	8.9	178	30.5
Personal income tax	1,783	1,990	1,300	-207	-10.4	483	37.2
All other 2/	1,025	966	820	59	6.1	205	25.0
Higher level							
Total budget	$19,238	$18,545	$14,868	$693	3.7	$4,370	29.4
Total family consumption	13,943	13,086	11,091	857	6.5	2,852	25.7
Food	3,752	3,551	2,845	201	5.7	907	31.9
Housing	5,070	4,761	4,052	309	6.5	1,018	25.1
Transportation	1,376	1,294	1,122	82	6.3	254	22.6
Clothing and personal care	1,790	1,699	1,509	91	5.4	281	18.6
Medical care	699	626	531	73	11.7	168	31.6
Other family consumption	1,256	1,155	1,032	101	8.7	224	21.7
Personal income tax	3,832	4,076	2,598	-244	-6.0	1,234	47.5
All other 2/	1,463	1,383	1,179	80	5.8	284	24.1

1/ Derived by applying changes reported in New York Consumer Price Index for appropriate classes of goods and services to Spring 1969 budget costs.

2/ Including gifts and contributions, personal life insurance, occupational expenses, and social security and disability payments.

NOTE: The family consists of an employed husband, age 38, a wife not employed outside the home, an 8-year old girl, and a 13-year old boy.

The gap between the greater New York area compared to the urban United States was substantially larger for the higher and intermediate level budgets than for the lower. The budget for a family of four at the higher level of living in New York-Northeastern New Jersey was 21 percent greater than in the urban United States; at an intermediate level the New York total was 15 percent higher; and at the lower level, 5 percent higher.

Living in the New York-Northeastern New Jersey area requires more dollars at the higher level of living than in any other of the 37 mainland areas studied. At the higher level, only the New York and Boston areas exceeded the $19,000 mark, while Atlanta was below $14,000. At $19,238, the New York higher level budget was $2,332 or 14 percent higher than the third highest area, San Francisco-Oakland. The higher level budget in New York-Northeastern New Jersey exceeded the budgets for the Los Angeles, Chicago, and Philadelphia areas by 16 to 19 percent. At the intermediate level, New York ranks second only to Boston. At the lower level, in contrast, the New York budget was closer to the national urban average, although still above all but five of the other 37 mainland areas studied.

The relative disadvantage of higher budgets in New York-Northeastern New Jersey compared to the urban United States has widened since Spring 1967. At that time, the budget total in New York was 2 percent higher than in the urban United States at the lower level, 10 percent greater at the intermediate level, and 14 percent higher at the higher level. Since Spring 1967, budget totals have risen more rapidly

Chart 7

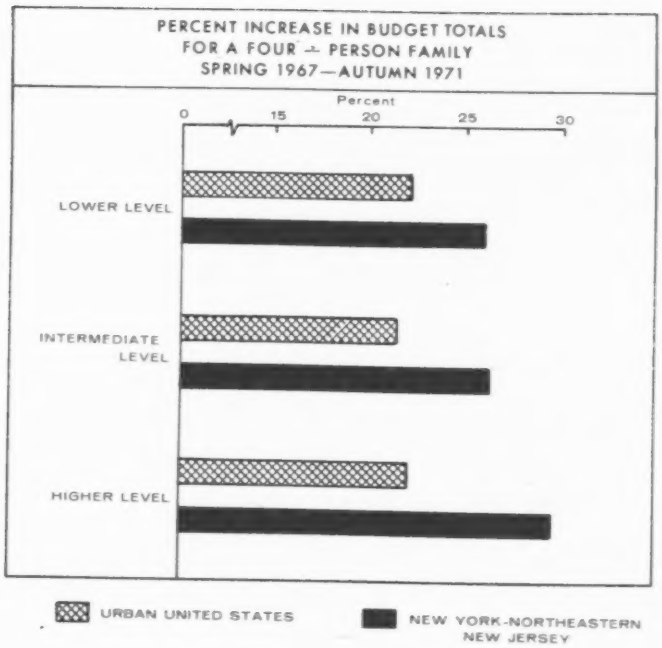


Table 10

Changes in budgets for a four-person family at three levels of living, United States and New York-Northeastern New Jersey, Spring 1967-Autumn 1971

Budget level and area	Budget totals Autumn 1971	Change Spring 1970-Autumn 1971		Change Spring 1967-Autumn 1971	
		Amount	Percent	Amount	Percent
Lower level					
United States	$7,214	$254	3.6	$1,299	22.0
New York-Northeastern New Jersey	7,578	395	5.5	1,557	25.9
Intermediate level					
United States	10,971	307	2.9	1,895	20.9
New York-Northeastern New Jersey	12,585	451	3.7	2,608	26.1
Higher level					
United States	15,905	394	2.5	2,855	21.9
New York-Northeastern New Jersey	19,238	693	3.7	4,370	29.4

in the New York area than nationally for all three budget levels -- a 26 as against about a 21 percent increase for the lower and intermediate, and a 29 in New York versus a 22 percent increase nationally for the higher. As a result, the spread between New York living costs and the average for urban areas in the United States widened to 5, 15, and 21 percent for the three budget levels, respectively, in Autumn 1971.

The high levels of the New York area intermediate and higher budgets relative to the urban United States primarily reflected higher New York costs for housing, food, and personal income taxes, as well as for most of the other budget categories. For the higher level, New York costs were 27 percent above the urban United States average for housing, 17 percent higher for food, and 47 percent above for personal income taxes. At the lower level, the New York-United States differential for personal income taxes was only 11 percent.

The budget-type family consists of a 38-year-old husband, employed full time; a wife, not employed outside the household; a boy of 13; and a girl of 8. The family group has average inventories of clothing, home furnishings, major durables, and other equipment. The manner of living in the lower budget differs from that in the intermediate and higher budgets primarily since at the lower level the family lives in rental housing (without air conditioning), performs more services for itself, and utilizes free recreation facilities in the community. Fewer families own cars, and the models owned are older than those specified in the other two budgets. The lower budget, however, does not represent a minimum or subsistence level of living. The higher budget, on the

Table 11

Estimated annual cost of family consumption for selected family types, New York-Northeastern New Jersey Autumn 1971 1/

Family size, type, and age	Lower level	Intermediate level	Higher level
Single persons under 35 years ...	$2,136	$3,422	$4,880
Husband and wife under 35 years:			
No children	2,991	4,791	6,832
1 child under 6	3,784	6,062	8,645
2 children, eldest under 6 ...	4,395	7,039	10,039
Husband and wife, 35-54 years:			
1 child, 6-15 years	5,005	8,017	11,433
2 children, eldest 6-15 years2/	6,104	9,777	13,943
3 children, eldest 6-15 years.	7,081	11,341	16,174
Single persons, 65 years and over	1,709	2,738	3,904
Husband and wife, 65 years and over	3,113	4,986	7,111

1/ For details on estimating procedures, see "Revised Equivalence Scale", BLS Bulletin 1570-2.
2/ Estimates for the BLS 4-person family budgets.

other hand, specifies a higher level of homeownership compared with the intermediate, a more ample automobile allowance, more complete inventories of household appliances and equipment, and more paid-for entertainment and household services. Inevitably, higher taxes go along with the income that permits the higher consumption level.

Family living expenses, or consumption costs -- food, housing, clothing, transportation, medical care, etc. -- were updated to 1970 and 1971 by applying changes in the Consumer Price Index to the Spring 1969

budget estimates for these components. This method of updating provides only an approximation of current budget costs because the Consumer Price Index reflects spending patterns and prices paid for commodities and services purchased by wage earners and clerical workers generally without regard to their family type and level of living. Social security and personal income taxes were updated to 1971.

It should be noted that differences in age and family size affect the budget levels. A young New York couple without children, for example, would need less for living expenses -- $2,991, $4,791, and $6,832, respectively -- about half the family consumption totals of the budget-type 4-person family. On the other hand, a family with three school-age children would need $7,081, $11,341, and $16,174 for consumption goods and services for these three levels of living, about 16 percent more than the budget-type 4-person family.

Higher living costs in the New York area, it may be noted, may serve to discourage some professional and skilled workers from residence here in the New York area. As an example, for two representative types of highly skilled workers, senior level draftsmen and advanced level engineers, the New York-United States wage differential falls far short of offsetting the higher cost of maintaining an intermediate and higher level of living in New York. Senior level draftsmen earn about 7 percent more than comparable workers nationally, but since living at an intermediate level in New York means 15 percent more in budget costs than the typical American urban family, the New York draftsman's relative pay advantage is converted to a 7-percent disadvantage if the comparative living costs are taken into account.

Chart 8

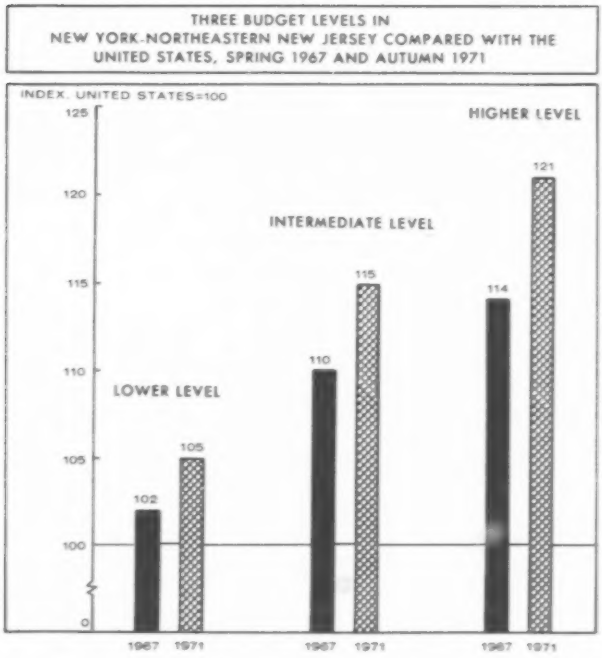


Table 12

Earnings and living cost comparisons
for selected occupations
New York City, 1970-71

Occupation	Earnings 1/	Cost of living 2/	Ratio of earnings to cost of living
(United States=100 for all comparisons)			
		Lower	
Material handling laborers	112	105	107
		Intermediate	
Senior level draftsmen	107	115	93
		Higher	
Advance level engineers	100	121	83

1/ Earnings data for material handling laborers and draftsmen (class A) are from BLS Area Wage Survey, 1970, for New York City. Earnings data for Engineers (V) are from BLS Survey of Professional, Administrative, and Technical Pay, 1971, for New York City.

2/ Data are based on BLS urban family budgets at three levels of living for a specifically-defined family of four, Autumn 1971, for New York-Northeastern New Jersey.

Similarly, although an advanced level engineer earns roughly the same pay in the New York area as in other metropolitan areas, his budget at a higher level of living was about 21 percent above the same worker in the urban United States as a whole. Consequently, the New York engineer is at a 17-percent disadvantage in his wage level living cost relationship compared to similar workers nationwide.

For workers living at the lower budget level, however, New Yorkers typically have a favorable wage-living cost ratio when compared to the United States. For material-handling laborers, for example, a key unskilled plant job surveyed by BLS in 90 metropolitan areas across the country, the 12-percent wage level advantage enjoyed by New York laborers compared to the corresponding metropolitan area average more than offset a 5 percent higher total needed to maintain the lower budget level here.

WELFARE TRENDS

New York City trends

Welfare rolls in New York City rose at a more rapid pace in 1971 than a year earlier. The 1971 average number of New York City residents on welfare increased to over 1.2 million, rising 112,000, or 10.2 percent, for the year. In 1970, the corresponding rise was 7.7 percent, the smallest since 1962. Last year's rise in welfare was below increases of 14 percent in 1969, and 25 percent each in 1967 and 1968. The over-the-year increase in welfare rolls slowed during the last half of 1971, averaging about 8 percent during the second half of the year compared to nearly 12½ percent during the first half.

About two-thirds of the 1971 increase in total welfare rolls was in the Aid to Dependent Children (ADC) program. By the end of the year, the number of ADC recipients in New York City had risen to a new peak of 905,000. The 1971 ADC increase of 9.6 percent, it may be noted, was nevertheless the lowest percent increase since 1962, when the rise was 6 percent.

Interarea comparisons

While New York City has seen a sharp increase in the number of ADC recipients since the mid-sixties, some other major population centers across the country experienced relatively more pronounced ADC

Chart 9

CHARACTERISTICS OF PERSONS ON PUBLIC ASSISTANCE IN NEW YORK CITY. DECEMBER 1971

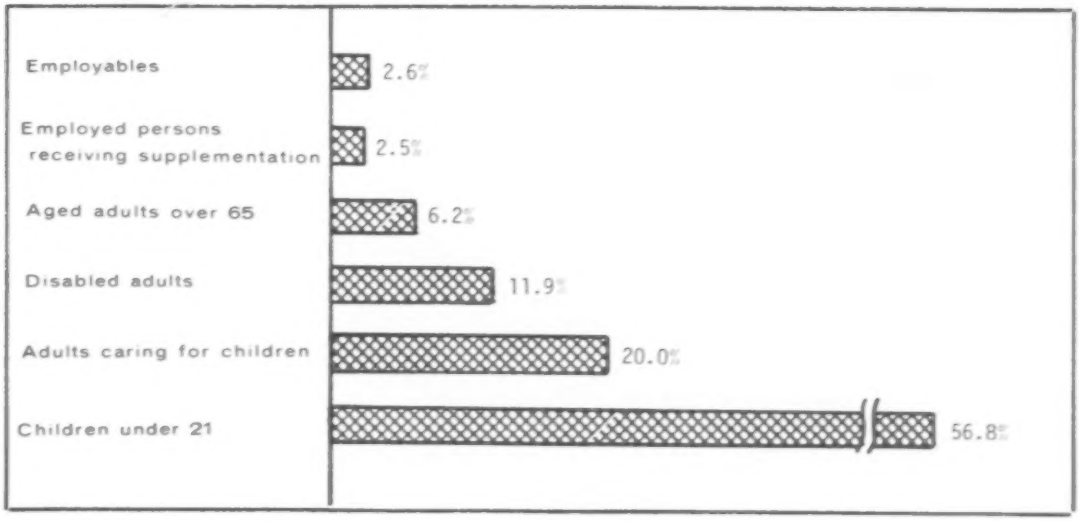


Table 13

Welfare recipients in New York City. 1958-1972

Year	Total recipients 1/		ADC 2/		ADC as percent of total
	Number (in thousands)	Percent change over year	Number (in thousands)	Percent change over year	
1958	332.9	-	190.2	-	57.1
1959	329.1	-1.1	191.8	0.8	58.3
1960	325.8	-1.0	195.2	1.8	59.9
1961	347.8	6.8	209.1	7.1	60.1
1962	363.5	4.5	220.6	6.0	60.7
1963	399.6	9.9	245.6	11.3	61.5
1964	446.6	11.8	280.8	14.3	62.9
1965	503.8	12.8	321.7	14.6	63.9
1966	566.6	12.5	377.5	17.3	66.6
1967	707.6	24.9	472.5	25.2	66.8
1968	889.3	25.7	596.1	26.2	67.0
1969	1,016.5	14.3	702.0	17.8	69.1
1970	1,094.7	7.7	772.3	10.0	70.5
1971	1,206.8	10.2	846.8	9.6	70.2
1972					
January ...	1,255.7	6.9	881.3	6.9	70.2

Source: New York City Department of Social Services.
1/ Includes recipients of Medical Assistance Program from 1961-66.
2/ Excludes ADC to unemployed parent.

Chart 10

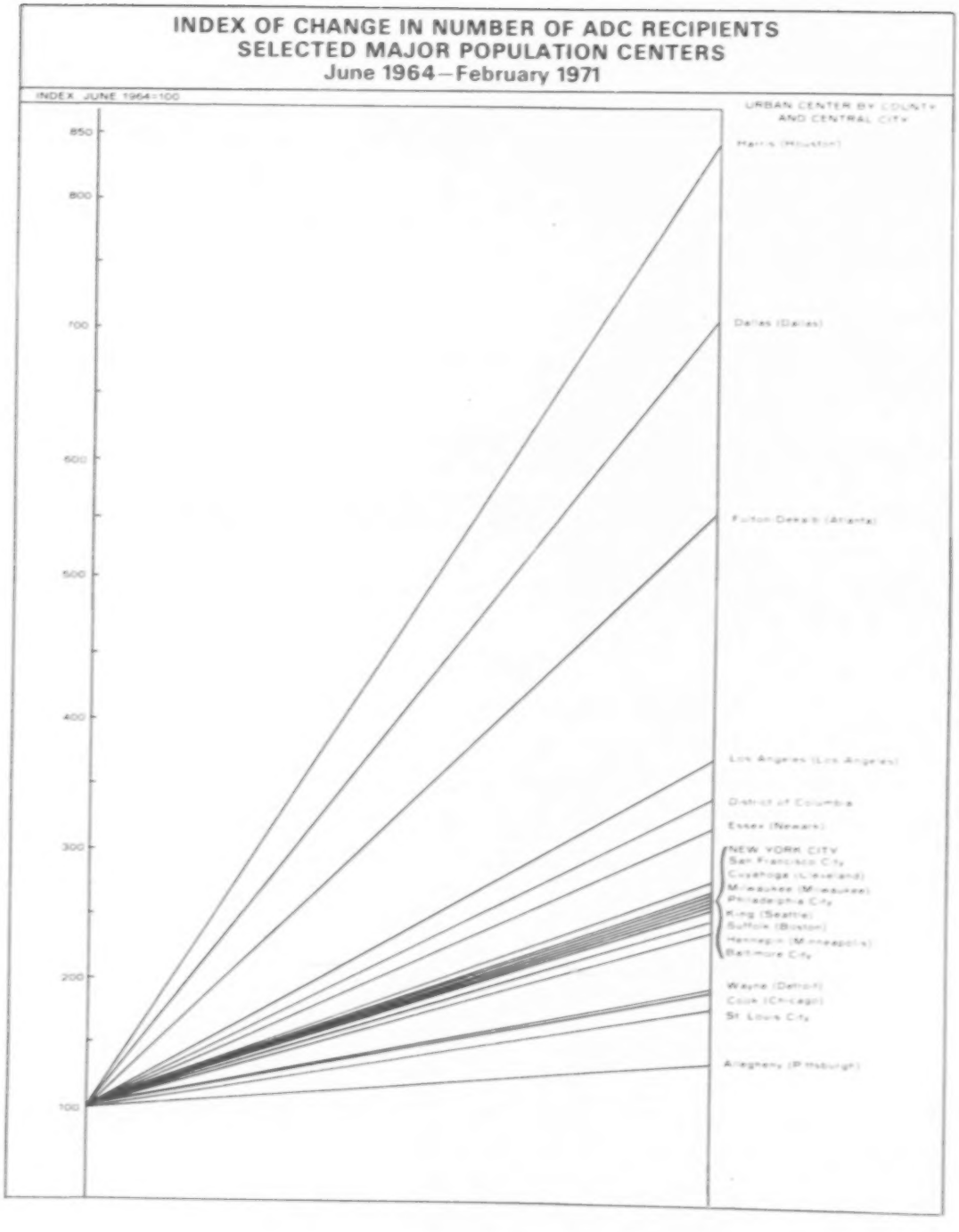
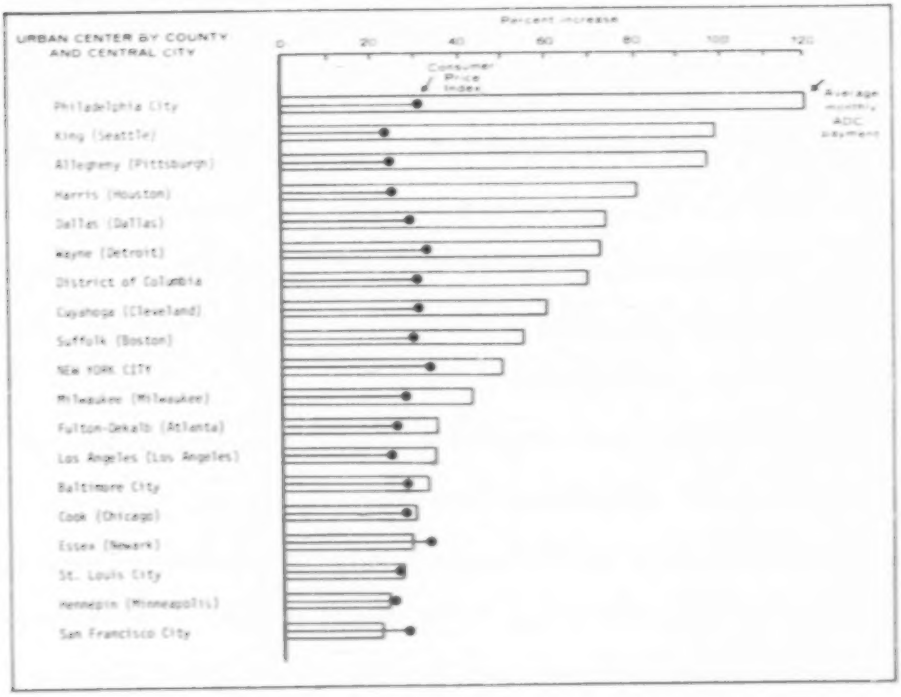

INDEX OF CHANGE IN NUMBER OF ADC RECIPIENTS
SELECTED MAJOR POPULATION CENTERS
June 1964—February 1971
INDEX JUNE 1964=100
850
800
700
600
500
400
300
200
100
URBAN CENTER BY COUNTY AND CENTRAL CITY
Harris (Houston)
Dallas (Dallas)
Fulton-DeKalb (Atlanta)
Los Angeles (Los Angeles)
District of Columbia
Essex (Newark)
NEW YORK CITY
San Francisco City
Cuyahoga (Cleveland)
Milwaukee (Milwaukee)
Philadelphia City
King (Seattle)
Suffolk (Boston)
Hennepin (Minneapolis)
Baltimore City
Wayne (Detroit)
Cook (Chicago)
St. Louis City
Allegheny (Pittsburgh)

Chart 11

PERCENT INCREASES IN AVERAGE MONTHLY ADC PAYMENT PER RECIPIENT
AND IN AREA CONSUMER PRICE INDEXES
SELECTED MAJOR POPULATION CENTERS, JUNE 1964—FEBRUARY 1971



Note: Consumer Price Index increases refer to New York-Northeastern New Jersey and Chicago Standard Consolidated areas and for other urban centers to Standard Metropolitan Statistical areas.

Table 14

Recipients of aid to dependent children as a percent of population selected major population centers, February 1971

Urban center by county and central city	Population 1970 1/	Total ADC recipients February 1971	ADC recipients as percent of population
Essex (Newark)	930,000	117,400	12.6
Baltimore City	905,800	113,100	12.5
Suffolk, (Boston)	735,200	88,600	12.0
Philadelphia	1,948,600	219,600	11.3
New York City	7,867,800	875,400	11.1
Fulton-Dekalb (Atlanta)	649,200	60,400	9.3
San Francisco County	715,700	64,400	9.0
Los Angeles County	7,032,100	623,500	8.9
District of Columbia	756,500	64,900	8.6
St. Louis City	951,400	68,300	7.2
Cook (Chicago)	5,492,400	364,300	6.6
Cuyahoga (Cleveland)	1,721,300	107,000	6.2
Wayne (Detroit)	2,666,800	155,800	5.8
Allegheny (Pittsburgh)	1,605,000	82,700	5.2
Milwaukee County	1,054,100	46,900	4.4
Hennepin (Minnesota)	960,100	41,700	4.3
King (Seattle)	1,156,600	46,700	4.0
Dallas County	1,327,300	49,800	3.8
Harris (Houston)	1,741,900	54,900	3.1

1/ Based on 1970 decennial Census.

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rises. Data available for the period June 1964 and February 1971 show the number of New York City ADC recipients rising from 319,000 in mid-1964 to 875,000 in February 1971, a 550,000 or 175-percent increase over the 6½-year span. Over the same period, however, Los Angeles County showed a rise in ADC recipients of about 455,000, or 271 percent, to a total of over 623,000 in February 1971. Other major centers with sharp ADC increases since the mid-sixties included the central counties of the Houston and Dallas areas, up nearly 750 and over 600 percent, respectively; Fulton-Dekalb Counties (Atlanta), up over 450 percent; and Essex County (Newark), up 218 percent.

Although New York City leads all other major centers in terms of the number of ADC recipients, its proportion of ADC recipients to population, 11.1 percent as of February 1971, was somewhat below the corresponding measures for Essex County (12.6 percent); the City of Baltimore (12.5 percent); Suffolk County (Boston), (12.0 percent); and the City of Philadelphia (11.3 percent). Major population centers with a smaller proportion of ADC recipients than New York City included Los Angeles County (Los Angeles), (8.9 percent); Cook County (Chicago), (6.6 percent); and Wayne County (Detroit), (5.8 percent).

EMPLOYMENT

Recent trends

The year 1971 saw a substantial loss of New York City jobs. The City experienced its sharpest decline in payroll employment on record, reflecting continuing cutbacks in factory employment coupled with the largest decline on record in the private sector outside manufacturing.

The 1971 job loss in New York City came to 130,000, bringing the cumulative employment decline over the past two years to 184,000. The City's job total averaged 3,613,000 in 1971. It may be noted that

Table 15

Percent change in wage and salary employment 1969–71

Industry	Percent change		
	1969-71	1970-71	1969-70
	United States		
Total	0.6	0.1	0.5
Manufacturing	-7.7	-3.9	-4.0
Nonmanufacturing	3.9	1.6	2.3
Private nonmanufacturing	3.5	1.3	2.1
Government	5.4	2.6	2.7
	New York-Northeastern New Jersey		
Total	-2.6	-2.3	-0.3
Manufacturing	-12.2	-7.0	-5.6
Nonmanufacturing	.9	-.8	1.7
Private nonmanufacturing	-.2	-1.3	1.1
Government	5.5	1.5	3.9
	New York City		
Total	-4.9	-3.5	-1.4
Manufacturing	-14.6	-8.0	-7.2
Nonmanufacturing	-2.1	-2.3	.2
Private nonmanufacturing	-3.5	-3.1	-.4
Government	4.0	1.1	2.9

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Chart 12

OVER-THE-YEAR CHANGES IN EMPLOYMENT NEW YORK CITY, 1961—71

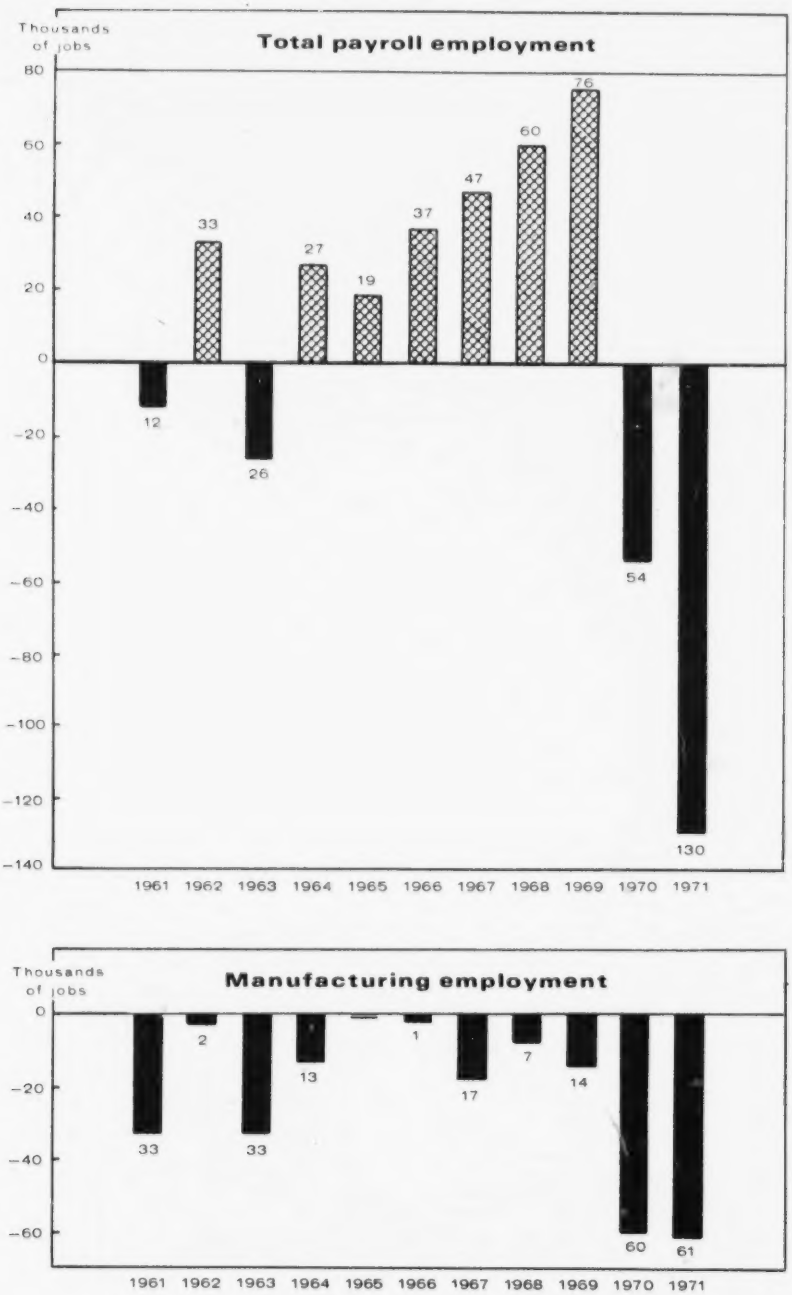

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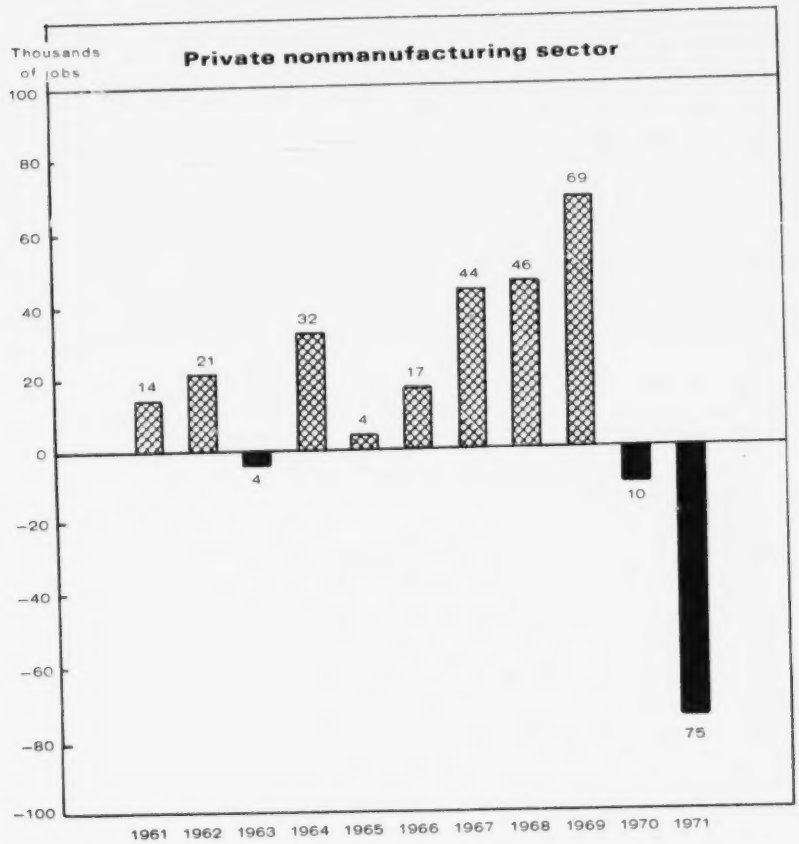
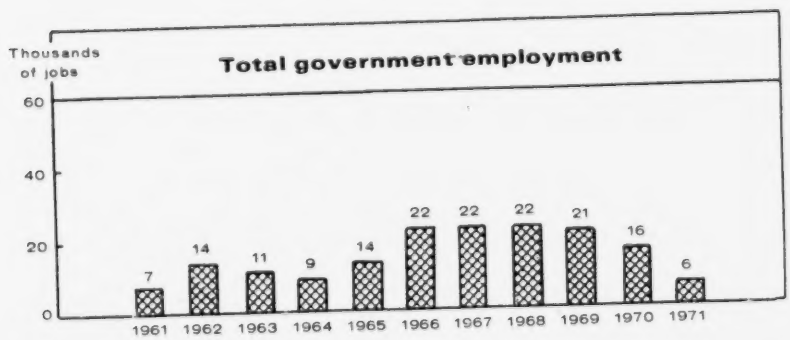
Chart 13

OVER-THE-YEAR CHANGES IN EMPLOYMENT NEW YORK CITY, 1961—71





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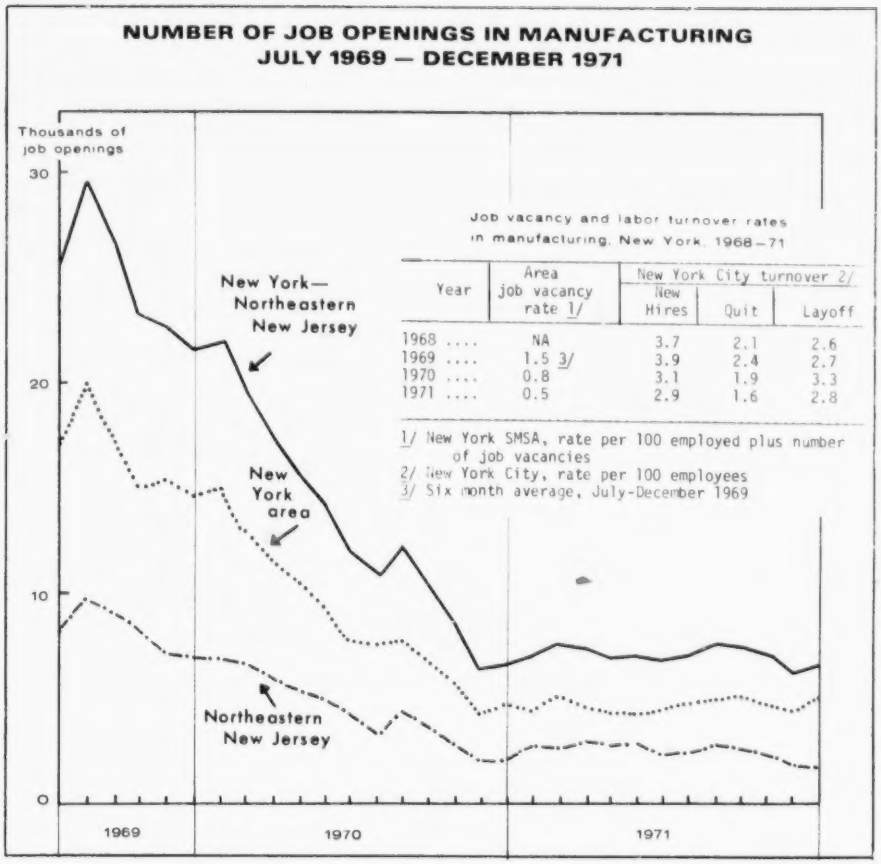
job losses in 1970 and 1971 offset City job gains totaling 183,000 in the preceding three years. To put it another way, the 1971 job total showed no gain from the 1966 figure.

The overall data clearly suggest that New York City's job picture was more significantly impacted by the slowdown of the past two years than was the case nationally. While the Nation as a whole experienced a gain of 600,000 jobs over the past two years, the job total in New York City declined by 184,000, or nearly 5 percent, between 1969 and 1971. Looked at another way, about one out of every 20 City jobs was lost over the past two years, including one in every seven manufacturing jobs. Last year, the City's job total declined by 3.5 percent while the national figure rose slightly, by 0.1 percent.

By the end of 1971, in December, however, some easing of the downward pressures was seen as the City's manufacturing job loss slowed to 39,000, down from an over-the-year loss of 81,000 manufacturing jobs in January 1971. Other indicators also pointed in this direction.

Hire and quit rates in manufacturing declined less sharply in 1971 than the year before. A more clear-cut plus was the decline in the layoff rate from 33 per 1,000 employees in 1970 to 28 per 1,000 in 1971. A positive factor was the rise in factory hours in 1971. Historically, the factory workweek typically increases before additional workers are hired to meet increased production demands. After declining in 1969 and 1970, average weekly hours of factory production workers in New York City increased slightly to 37.4 hours in 1971. The factory workweek rose to 37.8 hours in the fourth quarter of 1971, a half-hour more than a year earlier.

Chart 14



Job vacancy and labor turnover rates in manufacturing, New York, 1968–71

Year	Area job vacancy rate 1/	New York City turnover 2/		
		New Hires	Quit	Layoff
1968	NA	3.7	2.1	2.6
1969	1.5 3/	3.9	2.4	2.7
1970	0.8	3.1	1.9	3.3
1971	0.5	2.9	1.6	2.8

1/ New York SMSA, rate per 100 employed plus number of job vacancies
2/ New York City, rate per 100 employees
3/ Six month average, July-December 1969

In private industry outside of manufacturing -- a sector of considerable job growth during most of the sixties -- the City lost 75,000 jobs in 1971 and 10,000 in 1970. About a fifth of the nonfactory job loss in 1971, it should be noted, reflected major strikes in transportation and public utilities, including telephone and longshoring work stoppages. With the exception of contract construction, all of the major private industry components declined in 1971; the decline in service

industry employment was the first on record since 1950. The year-to-year job loss for all private nonmanufacturing industries in New York City slowed in the fourth quarter, with the lag down to 53,000 in December.

There was also a decline in the growth rate of public employment in 1970 and 1971. In the public sector, the 1971 job gain of 6,000 was the smallest since 1960, reflecting the impact of budget restraints at all levels and cutbacks in Federal jobs temporarily added in 1970 for the decennial census. The growth in State and local government employment in 1971 was about in line with 1970 but substantially below the preceding four years.

Longer-term employment trends

Over the past two decades, 1950-71, all of the City's employment growth was in service-producing industries, defined as transportation and public utilities, trade, finance, services, and government. Between 1950 and 1971, the City's overall job total rose by 145,000, or 4 percent. The service-producing industries added 489,000 jobs, or 21 percent, while goods-producing industries (manufacturing, contract construction, and mining), in contrast, declined by 344,000, or 30 percent. As a result, the proportion of all payroll jobs in the service-producing sector rose from 65 percent in 1950 to 77 percent in 1971.

The shift to the service economy accelerated in the sixties. Sharper employment gains were reported for service sectors during the past decade, and sharper job losses for goods-producing industries, than in the fifties.

Chart 15

JOB SHIFT TO SERVICE ECONOMY
NEW YORK CITY, 1950–71

	Job changes since 1950	
	1950-71	1966-71
	(in thousands)	
TOTAL	145	- 1
Goods-producing....	-344	-152
Manufacturing ...	-334	-159
Construction and mining	- 10	7
Service-producing..	489	151
Transportation and utilities..	- 33	- 20
Trade	- 46	- 35
Finance, insurance, and real estate ...	117	56
Services	257	64
Government	195	85

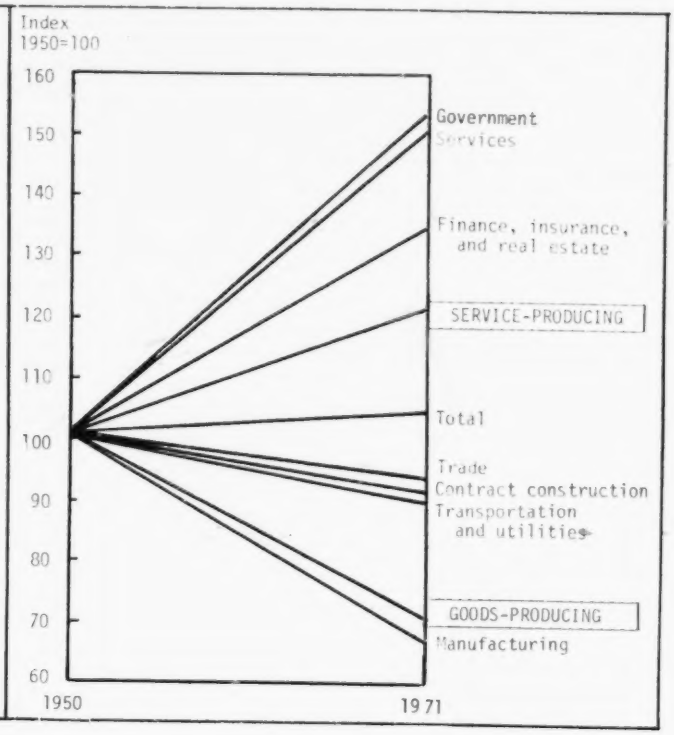


Chart 16

Employment trends in goods producing and service producing industries
New York City, 1950–60 and 1960–70

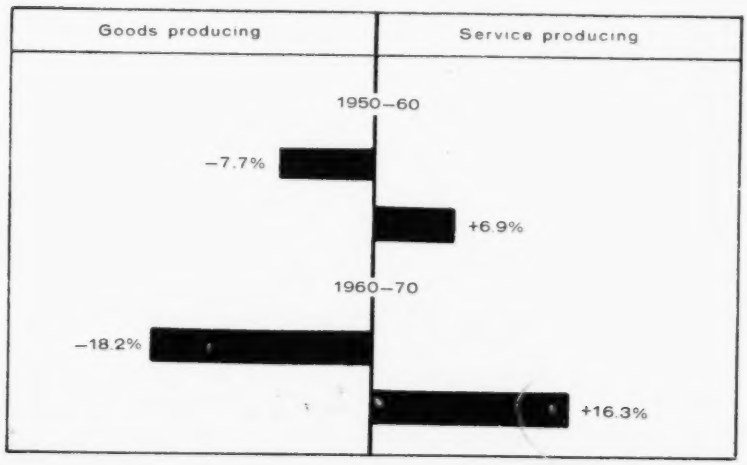


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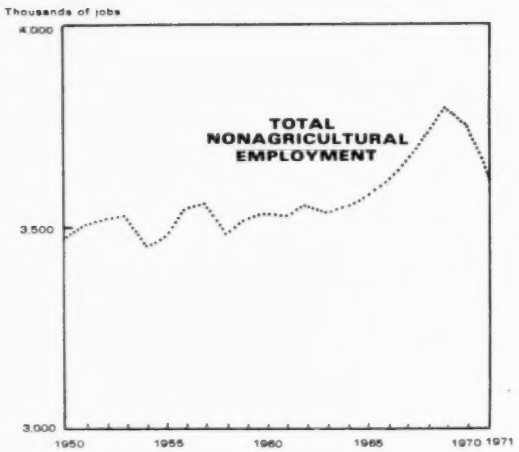
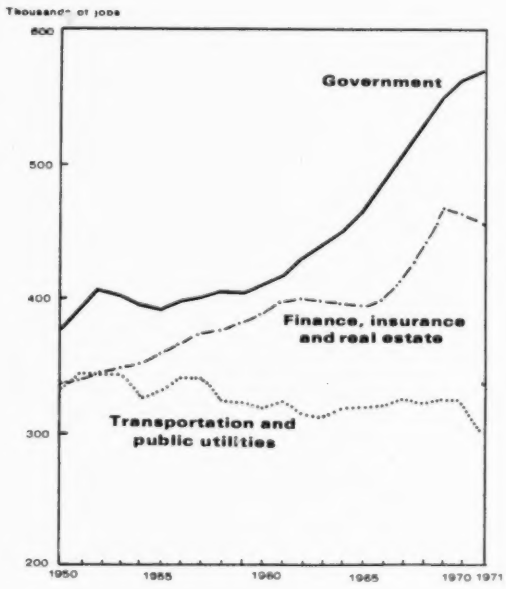
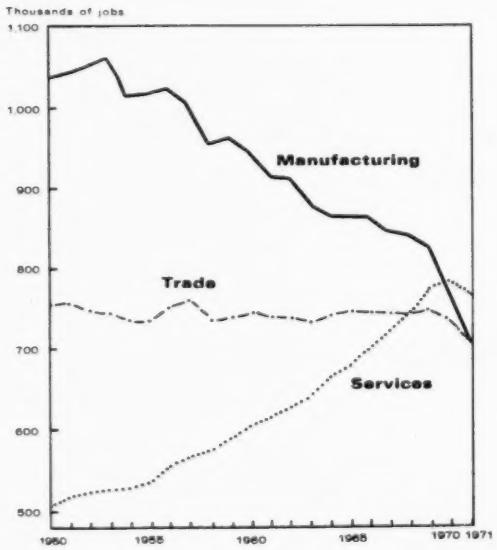
Chart 17

TRENDS IN PAYROLL EMPLOYMENT NEW YORK CITY, 1950—1971







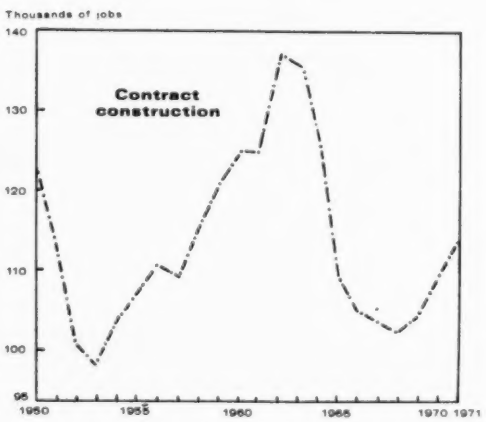


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Chart 18

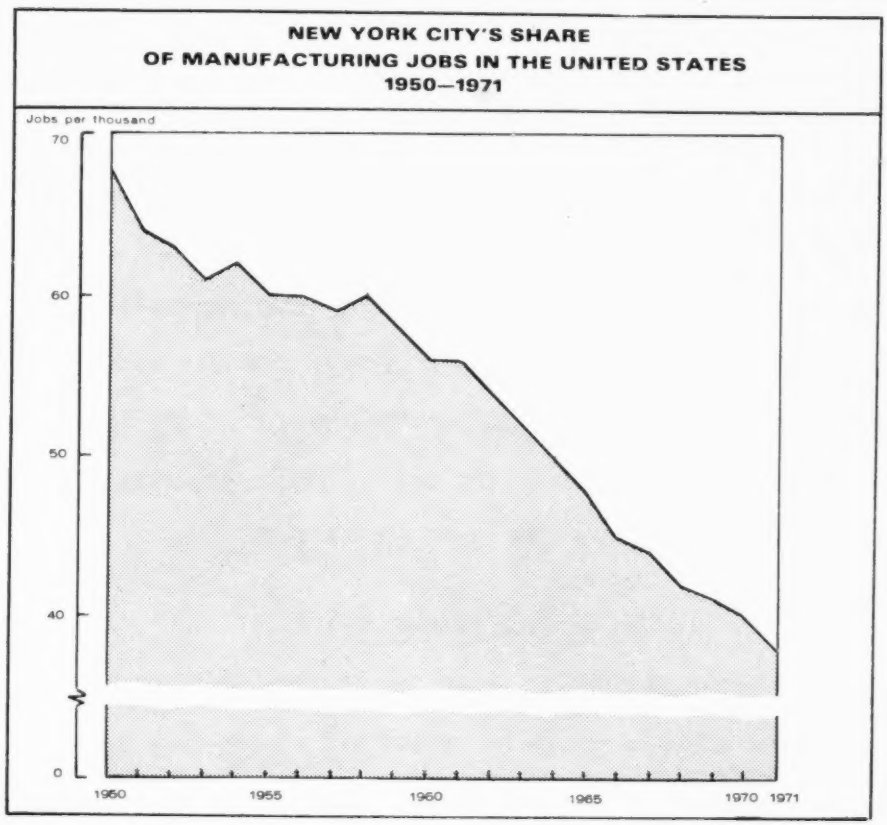


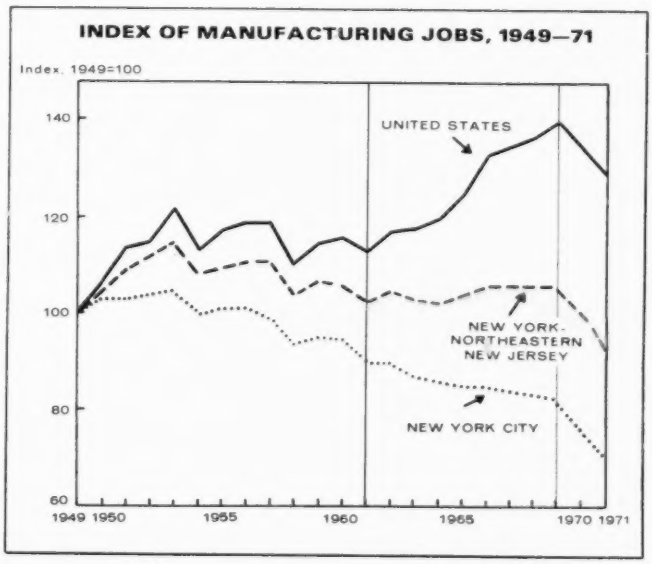
Table 16

Manufacturing employment, 1947—71

(in thousands)

Year	United States	New York-Northeastern New Jersey	New York City
1947 ...	15,545	-	1,073
1948 ...	15,582	-	1,066
1949 ...	14,441	1,662	1,012
1950 ...	15,241	1,733	1,039
1951 ...	16,393	1,817	1,043
1952 ...	16,632	1,868	1,055
1953 ...	17,549	1,909	1,066
1954 ...	16,314	1,818	1,015
1955 ...	16,882	1,820	1,019
1956 ...	17,243	1,853	1,026
1957 ...	17,174	1,837	1,006
1958 ...	15,945	1,732	954
1959 ...	16,675	1,772	963
1960 ...	16,796	1,761	947
1961 ...	16,326	1,713	914
1962 ...	16,853	1,737	912
1963 ...	16,995	1,711	879
1964 ...	17,274	1,688	866
1965 ...	18,062	1,722	865
1966 ...	19,214	1,766	864
1967 ...	19,447	1,763	847
1968 ...	19,781	1,767	840
1969 ...	20,167	1,766	826
1970 ...	19,369	1,666	766
1971 ...	18,610	1,550	705

Chart 19



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For the past two decades, the City has experienced a long-term attrition in factory employment. But in 1971, as was the case a year earlier, the rate of factory job loss was substantially above the average for the preceding two decades. At 705,000, the 1971 factory job total in New York City reflected a net loss of 121,000 over the past two years. This was equal to the total decline in manufacturing employment between 1960 and 1969 and exceeded the City's factory job loss totaling 92,000, for the entire decade of the 1950's. As a result of the long-term downtrend, New York City's share of the Nation's manufacturing jobs went from 68 per 1,000 in 1950 to 38 per 1,000 in 1971.

Industries of growth and decline in New York City

The weakened job situation for New York City workers during 1971 is pointed up by a review of recent and longer-term employment changes in the City's leading sectors of job growth and decline during the last half of the sixties. The 10 industries that showed the largest job gains between 1965 and 1970 experienced a total job loss of 19,000 in 1971. In 1970, the 10 growth industries added 25,400 jobs; the average increase of 3,200 jobs over the past two years, however, was well below the 45,600 jobs a year added to the City's employment total by these industries during the sixties.

The City's leading sectors of job decline continued to lose jobs, generally at a stepped-up rate, in the economic environment of 1970 and 1971. These 10 industry sectors accounted for nearly two-thirds of the 184,000 job decline experienced in New York City over the past

Chart 20

AVERAGE ANNUAL JOB CHANGE IN 10 LEADING SECTORS OF GROWTH AND DECLINE, NEW YORK CITY, 1960—71

(Thousands of jobs)

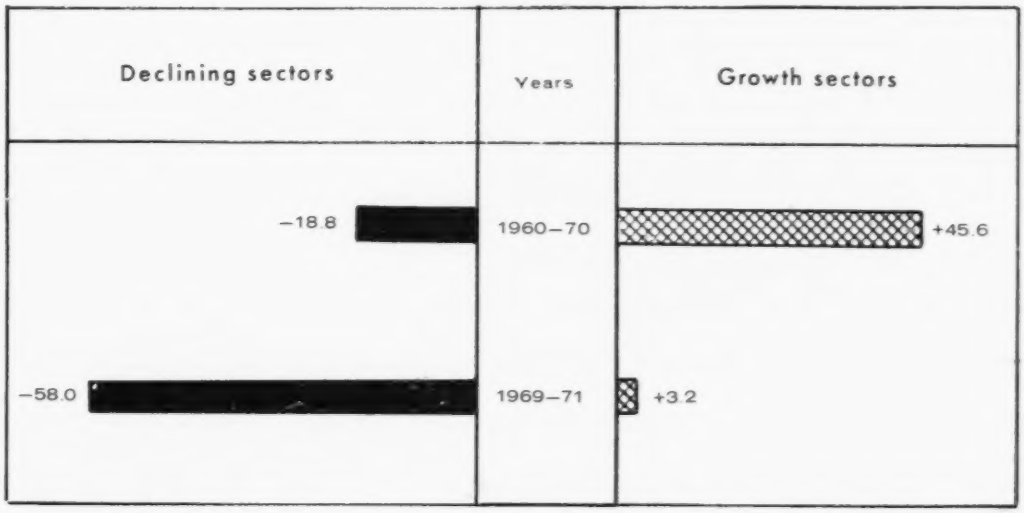

Table 17

Leading sectors of job changes, New York City, 1960—71

Industry sector	Number of jobs 1971	Employment change			
		1965-70	1960-70	1969-70	1970-71
Sectors of job growth - total ..	1,297,800	314,600	456,100	25,400	-19,000
Local government	422,800	89,300	146,300	11,200	8,300
Miscellaneous business services	182,500	37,500	62,800	- 1,000	-15,300
Banking	132,000	37,400	44,600	7,200	- 100
Medical and other health services ...	153,000	35,700	51,300	7,100	5,500
Securities brokers and exchange	87,000	35,200	41,900	-13,900	- 4,300
Communications	86,200	19,800	22,700	8,400	- 8,300
State government	43,200	16,600	17,300	2,700	2,300
Air transportation	53,100	15,600	22,000	100	- 3,700
Miscellaneous services	58,400	14,000	19,800	1,500	- 3,300
Educations (non-government)	78,700	13,500	27,400	2,100	- 200
Sectors of job decline - total .	917,400	-127,500	-187,700	-54,700	-61,200
Apparel manufacturing	189,900	- 37,400	- 63,500	-19,600	-14,000
Water transportation	33,800	- 17,100	- 24,500	- 7,400	- 8,100
Railroads	9,600	- 13,700	- 15,800	- 1,600	- 1,900
Personal services	47,300	- 11,200	- 10,500	- 4,200	- 4,900
Eating and drinking places	112,900	- 10,700	- 6,400	- 3,900	- 5,500
Food and kindred products	52,400	- 10,600	- 25,000	- 4,700	- 4,200
Miscellaneous manufacturing industries	56,800	- 8,300	- 12,200	- 5,600	- 6,100
Wholesale trade	287,000	- 8,100	- 12,700	- 6,800	-15,000
Hotels and lodging places	33,000	- 5,400	- 6,900	- 1,600	- 2,100
Real estate	94,700	- 5,000	- 10,200	700	600

Note: Based on leading sectors of growth and decline over five year span, 1965-70.

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two years. The job reduction in these declining sectors totaled 61,000 in 1971, following a 55,000 loss the previous year -- both substantially above the average decline of 19,000 jobs a year reported during the sixties.

Interarea comparisons

As was the case for New York, most population centers across the country experienced job cutbacks in 1971. Since data for other central cities are not available, the comparisons in this section deal with metropolitan areas. For New York, the area used includes, in addition to New York City, the four suburban counties of Nassau, Rockland, Suffolk, and Westchester. When employment changes between 1970 and 1971 for the New York metropolitan area are compared with those in the 10 largest metropolitan areas, we find that the New York area job decline of 2.7 percent last year was sharper than in such areas as Detroit (1.2 percent), Chicago (1.4 percent), or Los Angeles (2.2 percent). The New York area showed the sharpest drop in private nonfactory jobs in 1971 -- 2.1 percent -- among the 10 major areas and, with the exception of Cleveland, also the largest manufacturing job loss -- 7.8 percent.

Over the decade 1960-70, the New York area had one of the smallest increases in employment among the 10 metropolitan areas studied. The 14-percent rise in the New York area job total over the 10-year span fell below increases of 31 percent in Los Angeles, 25 percent in Detroit, and 20 percent each in Chicago and Boston. The New York area ranged near the bottom of the areas studied in private nonfactory job increases between 1960 and 1970; its total gain was further dampened by a sharp

Table 18

Percent changes in nonfarm employment, 10 major metropolitan areas, 1960—71

Metropolitan area	Percent change			
	Total	Manufacturing	Private non-manufacturing	Government
		1970-71		
Washington	2.1	- 0.4	1.4	3.3
Boston	- .8	- 6.6	.8	1.2
Pittsburgh	- .9	- 5.1	.6	3.2
Detroit	-1.2	- 3.9	.1	1.5
Chicago	-1.4	- 6.0	.4	2.5
Philadelphia	-1.6	- 6.3	-	1.9
San Francisco-Oakland	-1.8	- 6.3	-1.5	.5
Los Angeles-Long Beach	-2.2	- 6.8	-1.0	1.9
NEW YORK	-2.7	- 7.8	-2.1	1.3
Cleveland	-2.9	- 8.0	- .5	1.0
		1960-70		
Washington	57.4	28.4	61.3	55.2
San Francisco-Oakland	30.9	2.4	34.7	49.8
Los Angeles-Long Beach	30.8	9.2	38.7	55.6
Detroit	25.4	8.1	32.7	62.9
Cleveland	22.1	4.7	29.4	55.6
Chicago	20.3	8.1	22.6	51.0
Boston	20.2	- 8.6	32.9	25.6
Philadelphia	19.5	- .9	27.7	47.6
NEW YORK	13.7	-12.2	18.6	45.9
Pittsburgh	12.7	- 4.6	18.3	50.1

Table 19

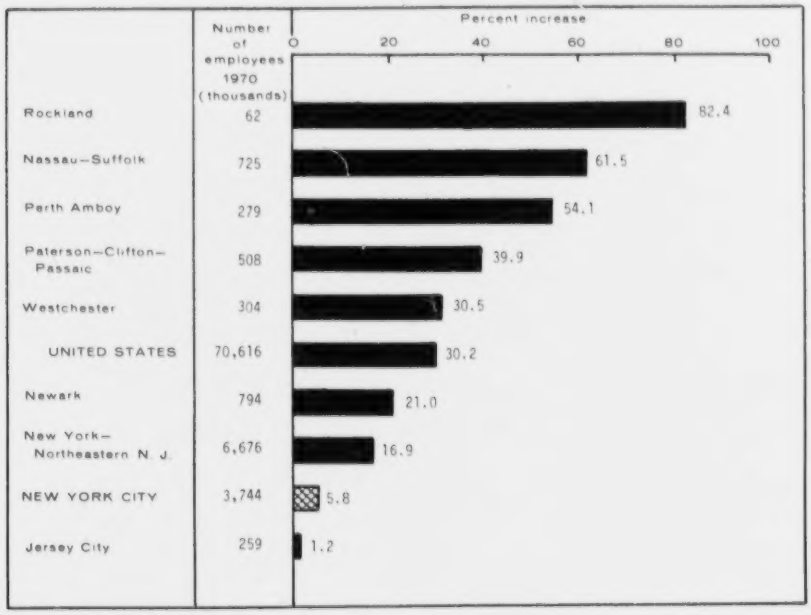
Percent change in wage and salary jobs, New York-Northeastern New Jersey New York area and New York City, 1960—71

Area	Total	Manufacturing	Private non-manufacturing	Government
		1970-71		
New York-Northeastern New Jersey ..	-2.3	- 7.0	-1.3	1.6
New York metropolitan area	-2.7	- 7.8	-2.1	1.3
New York City	-3.5	- 8.0	-3.1	1.1
Suburban New York area 1/	- .2	- 7.1	1.9	1.7
Northeastern New Jersey	-1.2	- 5.7	2.3	1.2
		1960-70		
New York-Northeastern New Jersey ..	16.9	- 5.4	22.6	47.3
New York metropolitan area	13.7	-12.2	18.6	45.9
New York City	5.8	-19.1	10.6	37.9
Suburban New York area 1/	52.6	20.1	73.7	62.9
Northeastern New Jersey	26.4	7.4	52.3	37.5

1/ Comprises Nassau, Rockland, Suffolk, and Westchester counties.

Chart 21

**RELATIVE JOB INCREASES BY GEOGRAPHIC SECTOR
NEW YORK-NORTHEASTERN NEW JERSEY
1960—1970**



12-percent drop in manufacturing jobs. Within the New York area, the suburbs showed a sharp 53-percent rise in total employment while the City increase was only 6 percent during the decade of the sixties.

Administrative office trends

While the factory labor force in New York City is larger than in any other United States city, a significant proportion of the "manufacturing" workers in New York City are part of the City's white-collar work force. New York City has long been the Nation's prime "front-office"

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Chart 22

EMPLOYMENT CHANGES IN
MANUFACTURING ADMINISTRATIVE OFFICES
NEW YORK CITY COMPARED WITH THE SUBURBS
1962-71 AND 1966-71

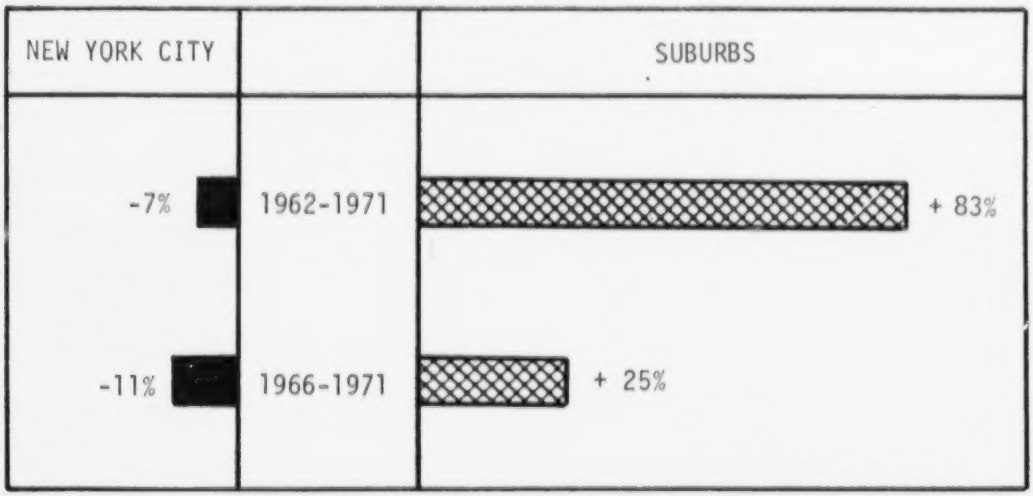


Table 20

Jobs in central offices of manufacturing companies
New York City and suburbs 1/, 1962-71

Year (December)	New York City		Suburbs 1/	
	Employment	Change from previous year	Employment	Change from previous year
1962	79,100	-	9,600	-
1963	81,000	1,900	10,000	400
1964	80,200	- 800	12,300	2,300
1965	80,100	- 100	13,000	700
1966	82,200	2,100	14,100	1,100
1967	83,900	1,700	15,900	1,800
1968	85,500	1,600	16,800	900
1969	84,800	- 700	19,400	2,600
1970	82,500	-2,300	18,500	- 900
1971	73,300	-9,200	17,600	- 900

1/ Includes Nassau, Suffolk, Westchester, and Rockland Counties.

city. The retention of corporate headquarters offices is widely held to be a matter of prime concern to its economic health.

In this context, the developments in 1971 may be considered unfavorable even beyond the actual numbers involved. In 1971, employment in administrative offices of manufacturing companies, the only sector for which historical data are available, declined by 9,200, to just over 73,000. The 1971 decline brought the total loss since 1968 to over 12,000. Between 1962 and 1968, this sector had added over 6,000 jobs. The decline since then has reduced the number of jobs in separate administrative offices of manufacturing companies to 6,000 below its 1962 level of 79,000. In the four outlying suburban counties of Nassau, Rockland, Suffolk, and Westchester, the decline of nearly 2,000 central office jobs during the last two years left the number of jobs in 1971 -- 17,600 -- significantly above the 1962 figure of 9,600.

POPULATION AND LABOR FORCE

Population trends

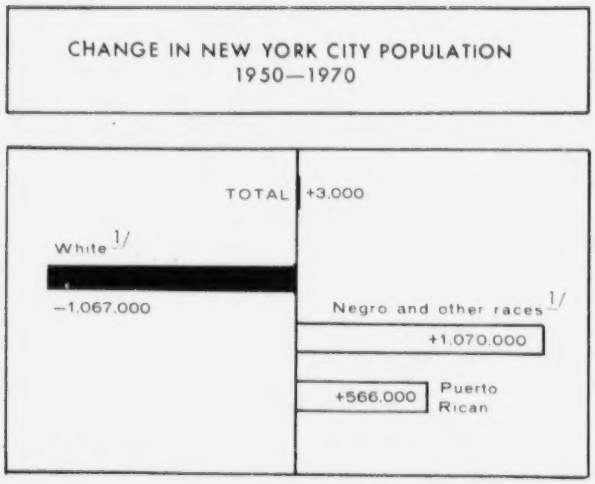
New York City experienced an increase in population during the last decade, as against population declines in several major cities across the country. Since 1960, the City's population rose by 113,000, or 1.5 percent, to a total of nearly 7.9 million in 1970. Between 1950 and 1960, in contrast, the City's population declined 110,000. Among

Chart 23

POPULATION OF THE 10 LARGEST CITIES
1960—1970

City	1970 Population	Change since 1960		
		Number	Percent	
			Decrease	Increase
CLEVELAND, OHIO	750,903	-125,147	14.3	
DETROIT, MICHIGAN	1,511,482	-158,662	9.5	
CHICAGO, ILLINOIS	3,366,957	-183,447	5.2	
BALTIMORE, MARYLAND ...	905,759	- 33,265	3.5	
PHILADELPHIA, PA.....	1,948,609	- 53,903	2.7	
WASHINGTON, D.C.....	756,510	- 7,446	1.0	
NEW YORK, NEW YORK	7,894,862	+112,878		1.5
LOS ANGELES, CAL.....	2,816,061	+337,046		13.6
DALLAS, TEXAS	844,401	+164,717		24.2
HOUSTON, TEXAS	1,232,802	+294,583		31.4

Chart 24



1/ Includes Puerto Ricans.

Source: Bureau of the Census.

Table 21

New York City population by ethnic group, 1950—1970

(Numbers in thousands)

Ethnic group	1950	1960	1970	Percent change 1950-60	Percent change 1960-70
Total	7,892	7,782	7,896	- 1.4	1.5
White 1/	7,116	6,641	6,049	- 6.7	-8.9
Negro and other races 1/	776	1,141	1,847	47.0	61.9
Puerto Rican	246	613	812 2/	149.2	32.5

Source: Bureau of the Census.
1/ Includes Puerto Ricans.
2/ Preliminary estimate.

the major cities, population losses over the decade were reported for Cleveland, down 14.3 percent; Detroit, off 9.5 percent; Chicago, down 5.2 percent; Baltimore, off 3.5 percent; and Philadelphia, down 2.7 percent. Los Angeles, Dallas, and Houston, on the other hand, showed substantial population gains since 1960.

Table 22

New York City population by age 1960-1970

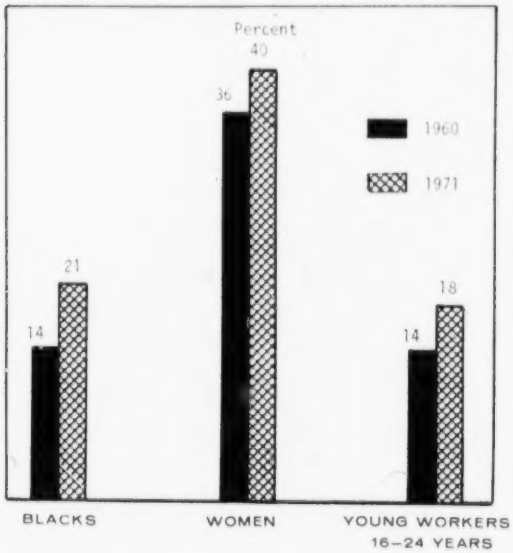
(numbers in thousands)

Age group	1960	1970	Percent change
Total, all ages	7,782	7,896	1.5
Under 16	1,956	1,994	1.9
16-24	870	1,130	29.9
25-44	2,128	1,991	- 6.4
45-54	1,085	942	-13.2
55-64	928	890	- 4.1
65 and over	814	948	16.5

Source: Bureau of the Census.

Chart 25

RELATIVE IMPORTANCE OF SELECTED GROUPS IN THE NEW YORK CITY LABOR FORCE 1960 AND 1971 1/



1/ Each group shown as a percent of total civilian labor force based on 1960 Decennial Census data and 1971 annual average labor force data from Current Population Survey.

Population changes in New York City were marked, in the sixties as in the preceding decade, by substantial shifts in ethnic composition. Looked at in the perspective of the two decades, between 1950 and 1970 the City's population remained just about unchanged. Its black population more than doubled to total 1.8 million in 1970, while its Puerto Rican community, comprising persons of Puerto Rican birth or parentage, more than tripled, totaling over 800,000 in 1970.

During the past 10 years, most of the increase in the City's population was centered among youth, aged 16 to 24, and elderly persons, 65 years of age and over. The number of persons of prime working age, 25 to 54, declined by 280,000 over the decade to 2,932,000 in 1970. Relating to the color and age shift in the configuration of the City's population, blacks in 1971 made up 21 percent of the City's labor force and young workers, 16 to 24, accounted for 18 percent of its work force.

Unemployment developments

While employment declined in 1970 and 1971, unemployment rose over the past two years. The unemployment rate in New York City rose to 6.7 percent in 1971, from 4.8 percent in 1970, and 3.6 percent in 1969. The number of unemployed in the City averaged 224,000 in 1971, compared to 159,000 in 1970. The 1971 increase in the City's unemployment was sharper than for the Nation. The U.S. jobless rate increased from 4.9 to 5.9 percent.

In 1971, the New York City unemployment rate for whites averaged 6.4 percent, while the black rate was 7.8 percent. The relationship of black to white unemployment remained more favorable in New York City than for all of the other major cities surveyed across the country. At 1.2 to 1 in 1971, the ratio of Negro-white unemployment rates in the City was also significantly below the national ratio of 1.8 to 1.

New York City's sharper-than-national rise in the incidence of unemployment between 1970 and 1971 paralleled the experience of other major central cities surveyed. For a composite of central cities of the 20 largest metropolitan areas surveyed, the jobless rate rose from

Chart 26

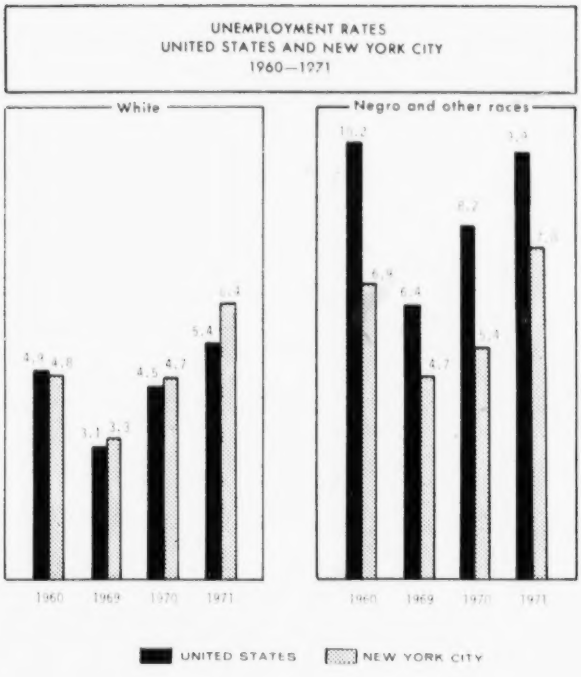


Table 23

Unemployment rates, New York City, New York-Northeastern New Jersey and United States, averages for 1971 and 1970

Color	New York City		New York-Northeastern New Jersey		United States	
	1971	1970	1971	1970	1971	1970
Total	6.7	4.8	6.0	4.5	5.9	4.9
White	6.4	4.7	5.7	4.3	5.4	4.5
Negro and other races	7.8	5.4	8.0	5.9	9.9	8.2
Male 20+						
White	5.8	4.2	4.7	3.4	4.0	3.2
Negro and other races	6.2	4.5	5.9	4.6	7.2	5.6
Female 20+						
White	5.5	4.5	5.8	4.6	5.3	4.4
Negro and other races	7.4	3.7	7.3	5.0	8.7	6.9
Ratio, Negro/White	1.2	1.2	1.4	1.4	1.8	1.8
Men	1.1	1.1	1.3	1.2	1.8	1.8
Women	1.3	.8	1.3	1.1	1.6	1.6

Table 24

Unemployment rates by color for selected central cities of major areas, 1971 annual averages

Central city	Unemployment rate			Ratio of negro to white rate
	Total	White	Negro and other races	
Houston	5.3	3.3	10.4	3.1
Cleveland	11.8	6.9	18.2	2.6
Detroit	10.0	7.5	14.2	1.9
Chicago	5.5	4.6	8.3	1.8
UNITED STATES	5.9	5.4	9.9	1.8
Philadelphia	5.5	4.4	7.4	1.7
Baltimore	7.9	5.7	9.7	1.7
Los Angeles	10.3	9.5	14.0	1.5
San Francisco	10.9	9.3	13.8	1.5
St. Louis	7.3	5.9	9.0	1.5
New York City	6.7	6.4	7.8	1.2

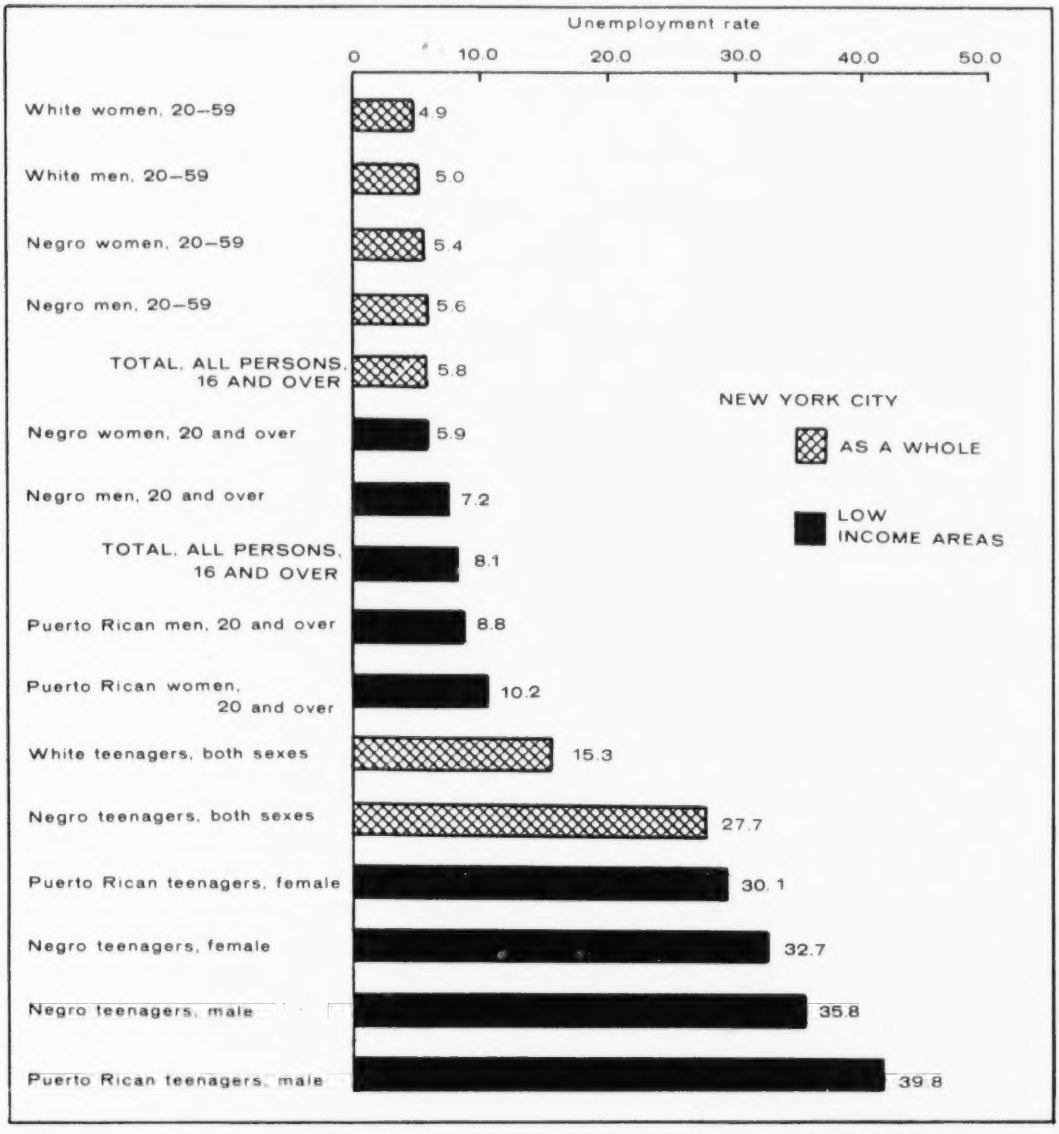
5.6 percent in 1970 to 7.2 percent in 1971. The experience of 10 of the largest cities is shown in Table 24. New York City and six others had higher unemployment rates than the national average in 1971.

Although the unemployment rate for New York City black workers rose to 7.8 percent in 1971, it remained significantly below the comparable national average of 9.9 percent. On the other hand, the City's jobless rate of 6.4 percent for white workers was above their 5.4-percent national rate. Part of the differential may reflect the significant proportion of persons of Puerto Rican birth or parentage in New York City. Puerto Ricans are primarily classified as white in the regular labor force surveys. A Census survey of seven New York City low-income areas conducted between October 1970 and March 1971 found that the Puerto Rican unemployment rate tended to be substantially above that for black residents of these areas -- 10.6 compared to 8.5 percent for men, and 12.0 as against 7.2 percent for women.

Wide variations exist in the recent unemployment experience for various groups of New York City residents living inside and outside of designated major low-income areas. For the seven low-income areas covered by a Census survey between October 1970 and March 1971, the unemployment rate averaged 8.1 percent compared to a city-wide rate of under 6 percent for the comparable period. As is the case for the City as a whole, the highest incidence of unemployment in these low-income areas was found for teenagers, with jobless rates ranging from 30 to 40 percent. City-wide, the teenage white rate was 15.3 percent and the black rate, 27.7 percent for the 1970-71 period. For the City as a whole, the unemployment rates

Chart 27

THE DIVERSITY OF UNEMPLOYMENT EXPERIENCE IN NEW YORK CITY, 1970-71



Note: The major New York City low income areas are those covered by the Census Employment Survey conducted between October 5, 1970, and March 5, 1971. Data for Puerto Ricans refer to persons of Puerto Rican birth or parentage. Data for Negroes exclude persons of races other than Negro or white as well as all Puerto Ricans. For New York City as a whole, the data represent an average for 1970 and 1971, in order to provide closer comparability to the time period covered by the data for the low income areas. The Negro category includes a small percentage of persons of races other than Negro or white; separate data on Puerto Ricans are not collected for New York City as a whole.

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Table 25

Occupational distribution of the employed by sex and color, New York City, 1960 and 1971 1/

Occupational group	White		Negro and other races	
	1971	1960	1971	1960
Total				
Percent	100.0	100.0	100.0	100.0
White-collar workers	61.5	55.3	45.0	29.3
Professional and technical	14.8	12.8	11.4	6.8
Managers, officials, and proprietors	12.7	10.3	4.0	3.4
Clerical workers	26.8	23.9	27.1	16.2
Sales workers	7.2	8.3	2.4	2.8
Blue-collar workers	26.8	34.3	30.7	40.7
Craftsmen and foremen	10.1	11.8	7.4	7.0
Operatives	13.9	19.4	19.1	27.3
Nonfarm laborers	2.8	3.2	4.1	6.4
Service workers	11.7	10.4	24.4	29.9
Private household	.5	.9	3.8	9.8
Other service workers	11.2	9.5	20.5	20.1
Men				
Percent	100.0	100.0	100.0	100.0
White-collar workers	53.2	48.4	38.0	27.1
Professional and technical	14.5	12.7	11.1	5.2
Managers, officials and proprietors	16.9	13.4	5.5	5.0
Clerical workers	13.9	13.3	18.5	14.1
Sales workers	7.9	9.0	2.9	2.7
Blue-collar workers	33.9	41.3	42.5	50.9
Craftsmen and foremen	15.6	17.3	12.0	11.6
Operatives	13.8	19.2	23.3	28.4
Nonfarm laborers	4.5	4.8	7.2	10.9
Service workers	12.9	10.3	19.5	22.0
Private household	.1	.1	.1	.8
Other service workers	12.8	10.2	19.4	21.1
Women				
Percent	100.0	100.0	100.0	100.0
White-collar workers	74.6	67.7	53.4	32.0
Professional and technical	15.2	12.9	11.8	8.8
Managers, officials and proprietors	6.2	4.6	2.2	1.4
Clerical workers	47.1	43.4	37.6	18.9
Sales workers	6.2	6.7	1.8	2.9
Blue-collar workers	15.6	21.6	16.3	27.9
Craftsmen and foremen	1.3	1.4	1.9	1.2
Operatives	14.1	19.9	14.0	25.9
Nonfarm laborers	.2	.3	.5	.7
Service workers	9.8	10.7	30.3	40.0
Private household	1.2	2.5	8.3	21.2
Other service workers	8.6	8.2	22.0	18.8

1/ Based on 1960 decennial census data and 1971 annual average labor force data from Current Population Survey.

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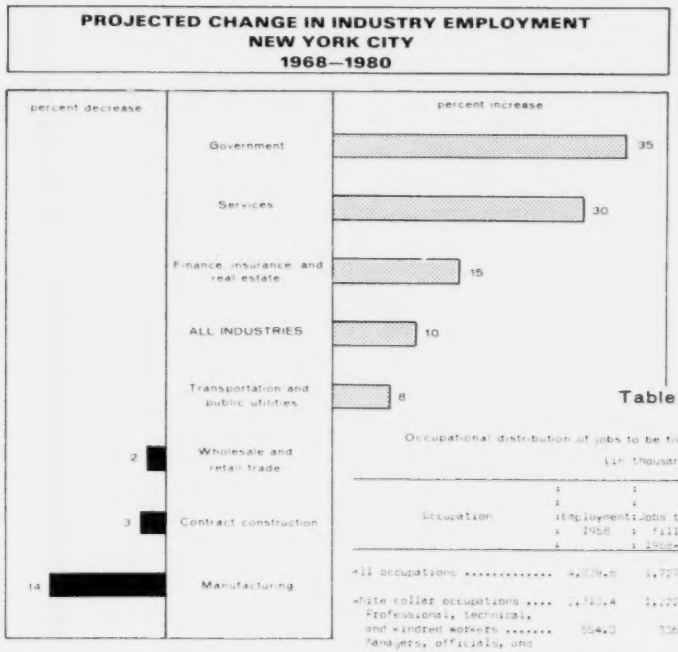
refer to an average of 1970 and 1971 in order to provide closer comparability to the time period covered by the data for the low-income areas.

One of the encouraging long-term developments has been some progress of Negro workers in New York City on the occupational ladder between 1960 and 1971. For Negro women, the proportion employed as private household workers, traditionally low-pay, low-status occupations, declined during the past 11 years, from 21 percent in 1960 to 8 percent in 1971. Since 1960, in contrast, the proportion of black women employed in white-collar jobs rose from 32 percent in 1960 to 53 percent in 1971. The proportion of Negro men employed in white-collar occupations also increased since 1960, from 27 percent to 38 percent. At the upper end of the job ladder, professional and technical jobs were held by 11 percent of Negro men and 12 percent of Negro women in 1971, compared to 5 percent for black men and 9 percent for black women in 1960. The black worker movement into white-collar jobs was part of a general shift for all workers during the sixties, but the movement was more pronounced for blacks than for whites.

OCCUPATIONAL PROJECTIONS

A look at tomorrow's job market in New York is revealing. All of the growth in employment in the City during the seventies is projected to be in service-producing industries, continuing the trend of the past

Chart 28



Source: New York State Department of Labor

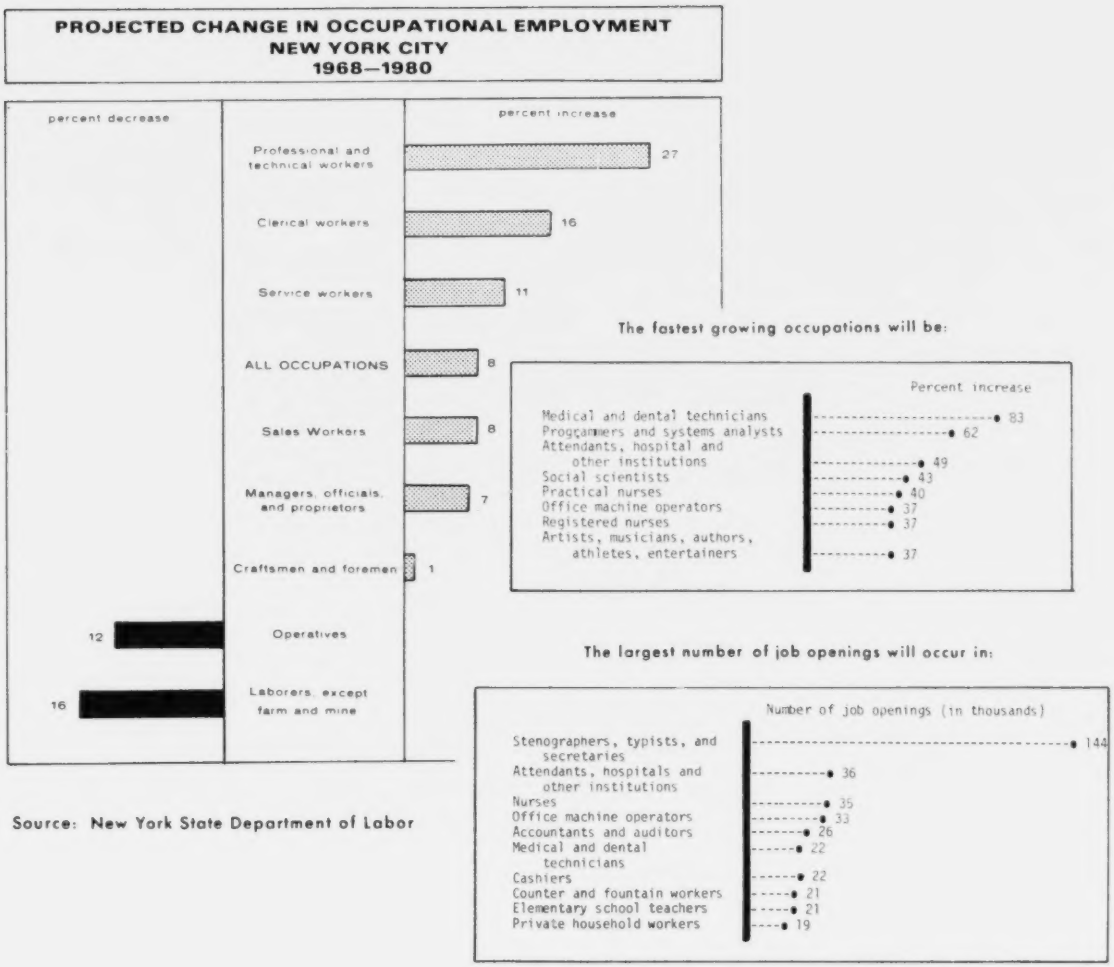
Table 26

Occupational distribution of jobs to be filled in New York City, 1968 - 1980
(In thousands)

Occupation	Employment 1968	Jobs to be filled 1968-1980	Jobs resulting from Industrial change (increase or decrease)	Deaths and retirements	Employment 1980
All occupations	4,239.6	1,727.7	332.1	1,395.6	4,571.7
White collar occupations	2,733.4	1,225.2	372.1	853.0	3,662.6
Professional, technical, and kindred workers	564.0	326.5	141.4	185.1	705.4
Managers, officials, and proprietors	412.7	180.2	28.6	166.6	441.3
Clerical and kindred workers	1,015.3	545.3	166.3	373.6	1,179.6
Sales workers	330.4	150.2	25.7	130.5	350.1
Blue collar occupations	1,194.4	225.3	- 98.8	324.3	1,096.4
Craftsmen, foremen, and kindred workers	416.5	117.3	5.2	114.8	418.7
Operatives and kindred workers	640.9	96.8	- 77.7	174.5	567.2
Laborers, except farm and mine	137.0	9.	- 22.3	35.0	114.5
Service workers	511.6	281.8	57.8	224.3	791.4
Farmers and farm laborers	1.2	0.4	0.1	0.2	1.3

1954

Chart 29


PROJECTED CHANGE IN OCCUPATIONAL EMPLOYMENT
NEW YORK CITY
1968—1980
percent decrease
percent increase
Professional and technical workers 27
Clerical workers 16
Service workers 11
ALL OCCUPATIONS 8
Sales Workers 8
Managers, officials, and proprietors 7
Craftsmen and foremen 1
12 Operatives
16 Laborers, except farm and mine
The fastest growing occupations will be:
Percent increase
Medical and dental technicians 83
Programmers and systems analysts 62
Attendants, hospital and other institutions 49
Social scientists 43
Practical nurses 40
Office machine operators 37
Registered nurses 37
Artists, musicians, authors, athletes, entertainers 37
The largest number of job openings will occur in:
Number of job openings (in thousands)
Stenographers, typists, and secretaries 144
Attendants, hospitals and other institutions 36
Nurses 35
Office machine operators 33
Accountants and auditors 26
Medical and dental technicians 22
Cashiers 22
Counter and fountain workers 21
Elementary school teachers 21
Private household workers 19

Source: New York State Department of Labor

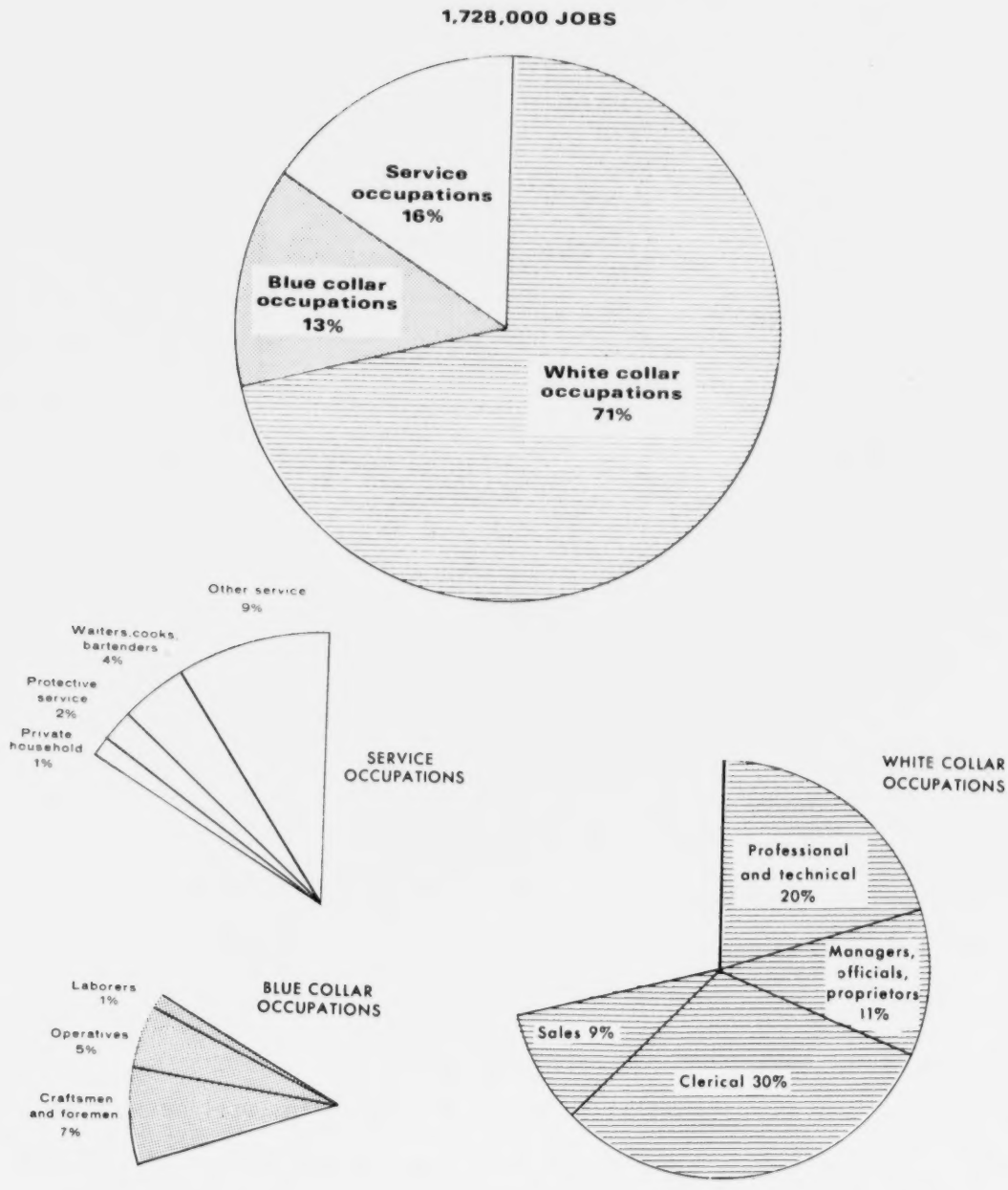
two decades. By 1980, close to eight of every ten New York City workers will be in the service-producing sector, according to New York State Department of Labor projections. By industry, the largest gains are projected for government and services.

Most job opportunities during the seventies will develop as a result of labor force attrition rather than through industrial expansion

1755

Chart 30

OCCUPATIONAL DISTRIBUTION OF JOBS TO BE FILLED IN NEW YORK CITY 1968–1980



Source: New York State Department of Labor

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Table 27

WHAT JOBS WILL THERE BE?

OCCUPATIONS IN WHICH 100 OR MORE JOB OPENINGS PER YEAR ARE PROJECTED IN NEW YORK CITY, 1968 — 80

Occupation	Projected openings 1968-80
Stenographers, typists, and secretaries	143,700
Attendants, hospital and other institutions	36,300
Professional and student nurses	35,000
Office machine operators	32,900
Technical workers and specialists (excluding medical and dental)	30,600
Artists, musicians, authors, athletes, and entertainers	30,200
Accountants and auditors	26,000
Medical and dental technicians	22,300
Cashiers	21,700
Counter and fountain workers	21,100
Elementary school teachers	20,700
Private household workers	19,200
Telephone operators	18,000
Cooks, except private household	18,000
Hand bookkeepers	17,100
Waiters and waitresses	16,800
Deliverymen, routemen, cab drivers	16,400
Guards and watchmen	16,400
Secondary school teachers	15,600
Bus, truck, and tractor drivers	15,500
College teachers	15,400
Janitors and sextons	14,000
Practical nurses	13,700
Bank tellers	12,800
Physicians and surgeons	12,700
Teachers, other than elementary, secondary and college	11,800
Policemen, marshalls, and sheriffs	11,000
Accounting clerks	10,400
Social, welfare and recreation workers	10,400
Charwomen and cleaners	10,300
Lawyers and judges	10,000
Postal clerks	9,900
Sewers and stitchers, manufacturing	9,800
Bartenders	9,800
Programmers and systems analysts	8,100
Electricians	7,700
Carpenters	6,900
Draftsmen	6,200
Reporters and editors	5,700
Painters and paperhangers	5,600
Firemen, fire protection	5,300
Motor vehicle mechanics	5,100
Airline stewards and stewardesses	5,000
Laundry and dry cleaning operatives	4,600
Plumbers and pipefitters	4,500
Linemen and servicemen	4,500
Personnel and labor relations workers	4,300
Mail carriers	4,200
Civil engineering and construction technicians	4,100
Civil engineers	4,000
Electro and mechanical engineering technicians	3,500
Airplane mechanics and repairmen	3,500
Meat cutters, except meat packing	3,300
Dentists	3,200
Clergymen	3,200
Librarians	3,000
Electrical engineers	2,900
Designers, except design draftsmen	2,900
Pharmacists	2,700
Mechanical engineers	2,400
Credit managers	2,400
Pressmen and plate printers	2,300
Auto service and parking attendants	2,200
Photographers	2,100
Purchasing agents	2,100
Welders and flame cutters	2,100
Chiropractors and therapists	2,000
Statisticians and actuaries	2,000
Excavating, grading machine operatives	2,000
Shipping and receiving clerks	1,900
Photoengravers and lithographers	1,800
Chemists	1,800
Machinists	1,700
Inspectors, other than metalworking	1,700
Psychologists	1,600
Architects	1,600
Railroad and car shop mechanics	1,600
Safety and sanitation inspectors	1,500
Economists	1,400
Airplane pilots and navigators	1,400
Radio and TV mechanics	1,400
Bakers	1,400
Brickmasons, stone and tile setters	1,300
Industrial engineers	1,200
Dieticians and nutritionists	1,200
Social scientists, other than economists and statisticians	1,200

Note: Job openings refer to openings arising from both industrial growth and the need to replace workers leaving the labor force.

Source: New York State Department of Labor.

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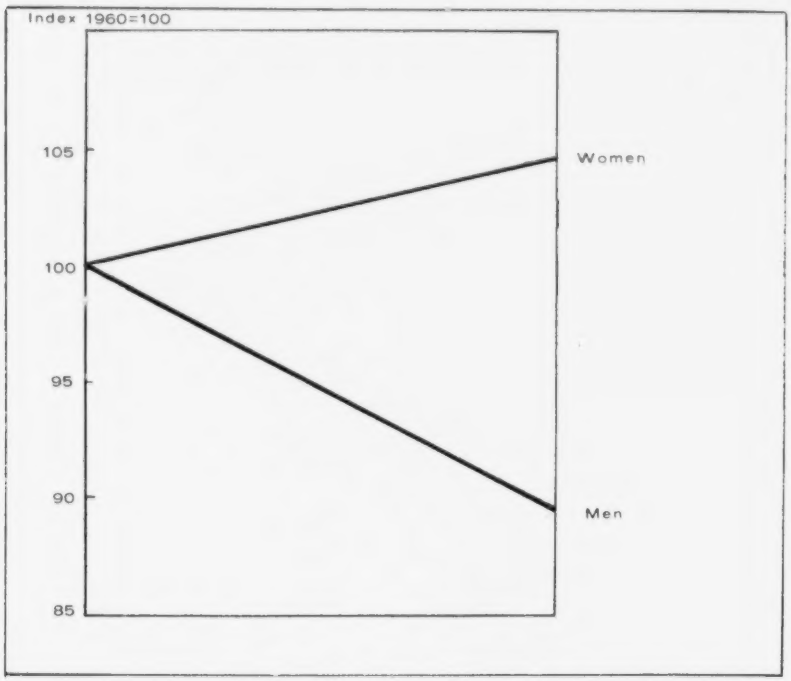
Chart 31

INDEX OF EMPLOYMENT CHANGE FOR MEN AND WOMEN
RESIDENTS OF NEW YORK CITY, 1960–71

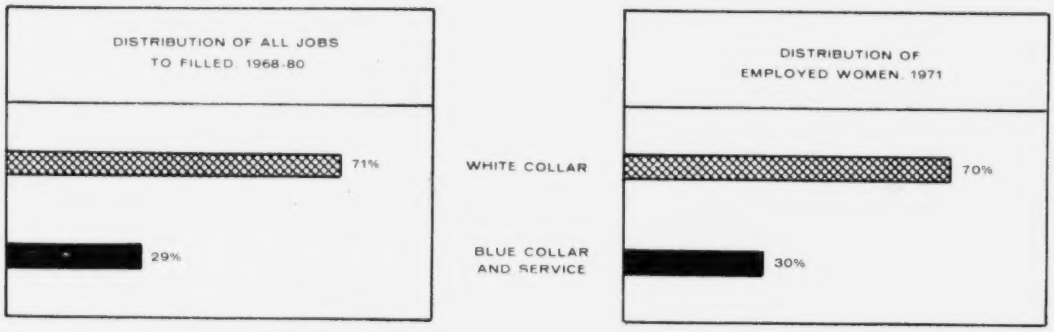


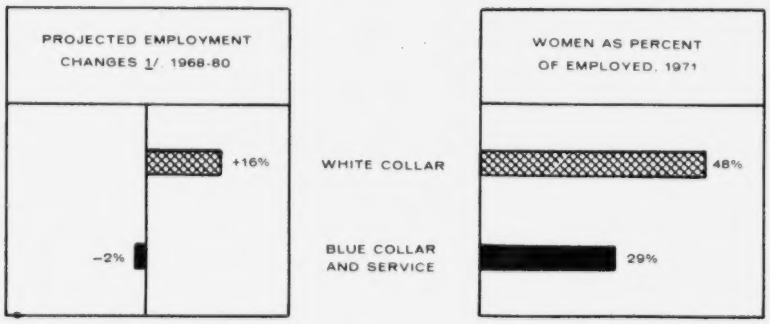
and growth. Eight out of every ten of the 1.7 million City jobs to be filled between 1968 and 1980 will result from replacement needs.

White-collar jobs will account for seven out of every ten job opportunities resulting from replacement needs and growth in New York City during the seventies. Blue collar and service jobs will account for the remaining three out of every ten job opportunities. Men currently hold 71 percent of the blue-collar and service jobs and slightly more than half of the white-collar jobs.

Chart 32

PROJECTED JOB OPPORTUNITIES AND EMPLOYMENT GROWTH AND CURRENT EMPLOYMENT OF WOMEN, NEW YORK CITY





1/ Net changes excluding job opportunities resulting from replacement needs.

The number of employed women residing in New York City rose by nearly 4 percent between 1960 and 1971, while the number of men declined by 10½ percent. The effect of projected occupational employment changes may lead to a further feminization of the job market.

Table 28

Occupational distribution of employment in 1968 and jobs to be filled, 1968-80
New York City and the United States

Occupational group	New York City		United States	
	Employment 1968	Jobs to be filled 1968-80	Employment 1968	Jobs to be filled 1968-80
All occupations (thousands) ...	4,039.6	1,727.7	75,920	47,880
Percent distribution	100.0	100.0	100.0	100.0
White collar occupations	57.2	70.8	46.8	58.4
Professional and technical	13.7	19.5	13.6	19.5
Managers, officials, proprietors	10.2	11.0	10.2	9.5
Clerical	25.1	31.3	16.9	22.8
Sales	8.2	9.0	6.1	6.6
Blue collar occupations	29.6	12.9	36.3	22.1
Craftsmen and foremen	10.3	6.8	13.2	9.9
Operatives	15.9	5.6	18.4	10.7
Laborers, except farm and mine	3.4	0.5	4.7	1.5
Service	13.2	16.3	12.4	18.9
Farmers and farm laborers	1/	1/	4.5	0.6

1/ Less than 0.05 percent.
Source: New York State Department of Labor.

During the seventies, the largest number of job openings in the City are expected for several traditionally female occupations. Openings for stenographers, typists, and secretaries top the list with nearly 144,000 expected between 1968 and 1980. Other leading sources of jobs for the seventies, heavily filled now by women, include nurses, elementary and secondary school teachers, cashiers, telephone operators, and private household workers.

The occupational configuration of New York City women now -- 70 percent in white-collar jobs -- is quite favorable in terms of paralleling where the job openings are expected during the seventies. Aside from replacement needs, New York City's white-collar workforce is projected to increase 16 percent between 1968 and 1980, while blue-collar and service jobs are expected to decline slightly. Currently, women comprise close to half of the City's white-collar jobs but only about 30 percent of its blue-collar and service workers.

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VT 019 294

MCKNIGHT, A. JAMES

IMAGE GENERATION FOR DRIVING SIMULATORS: ANALYSIS OF THE DRIVING TASK.

HUMAN RESOURCES RESEARCH ORGANIZATION, ALEXANDRIA, VA.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 70 5P. PAPER PRESENTED AT THE ANNUAL HUMAN FACTORS WORKSHOP IN HIGHWAY TRANSPORTATION (3RD, WASHINGTON, D.C., JANUARY, 1970).

DESCRIPTORS - SPEECHES; *CONCEPTUAL SCHEMES; *SIMULATORS; SIMULATION; OPERATIONS RESEARCH; VEHICULAR TRAFFIC; *BEHAVIORAL OBJECTIVES; *DRIVER EDUCATION

ABSTRACT - DELIVERED AT A HUMAN FACTORS WORKSHOP, THIS SPEECH CONTAINS AN OVERVIEW OF CONCEPTUALIZATION PLANS FOR THE DEVELOPMENT OF DRIVING SIMULATORS CAPABLE OF INITIATING DIRECT OR INDIRECT RESPONSES OF VEHICLE OPERATORS. THOUGH INCOMPLETE AT THIS TIME, THE EFFORT WHEN FINISHED WILL HOPEFULLY RESULT IN THE DEVELOPMENT OF A SET OF INSTRUCTIONAL OBJECTIVES FOR DRIVER EDUCATION. TO ACCOMPLISH THE GOAL, A RATIONAL ANALYTIC APPROACH OF THE DRIVING SYSTEM IS BEING CONDUCTED AS WELL AS SOME EMPIRICAL INVESTIGATION. SOME OF THE PHASES THROUGH WHICH THE INNOVATION MUST GO BEFORE BEING REALIZED INCLUDE: (1) IDENTIFICATION OF TASKS THAT CONFRONT DRIVERS, (2) CLASSIFICATION OF IDENTIFIED BEHAVIORS INTO A LOGICAL HIERARCHY, (3) DEVELOPMENT OF AN EVALUATION INSTRUMENT ABLE TO ASSESS THE DEGREES TO WHICH INSTRUCTIONAL OBJECTIVES HAVE BEEN MET, (4) REVIEW OF TASKS TO: (A) DETERMINE ADEQUACY OF PRESCRIBED BEHAVIORS, (B) EVALUATE THE USEFULNESS OF BEHAVIORS TO SPECIFIED SYSTEM CRITERIA, AND (C) PRESCRIBE SUITABLE PERFORMANCE STANDARDS. (SN)

IMAGE GENERATION FOR DRIVING SIMULATORS

Analysis of the Driving Task

by

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This paper was prepared for presentation at the Third Annual Human Factors Workshop in Highway Transportation at Washington, D.C., in January 1970. It describes an analysis of the automobile driving task which the Human Resources Research Organization (HumRRO) was then conducting for the US Department of Transportation. The objective of this work was to identify driving behaviors as a basis for developing instructional objectives for driver-education courses.

ATI 19294

IMAGE GENERATION FOR DRIVING SIMULATORS

Analysis of the Driving Task

by

A. James McKnight, PhD
Human Resources Research Organization

The purpose in generating an image for a driving simulator (one that simulates driving rather than the driver) is to create a facsimile of the sensory inputs to which the driver directly or indirectly responds. In this sense, the purpose of a driving simulator is to fabricate certain elements of the driving task. The fidelity of the simulator is then reckoned in terms of its ability to simulate the essentials of the task and to evoke the behavior that is characteristic of the task. The importance of "task fidelity" has been made many times and I'm not here to belabor it. I mention it to give relevance to my purpose in coming here which is to describe an analysis of the driving task that we are doing for the Department of Transportation, under Dr. Voas' cognizance. It is not our specific objective to identify simulation requirements; that work--or something approximating it--is being performed by the American Institutes for Research under Harris Shettel and Sandy Schumacher. Our study is concerned with the identification of driving behaviors leading ultimately to the development of instructional objectives for driver education courses.

The approach we are using in the analysis of the driving task is fundamentally system analytic; it is based upon a comprehensive study of the driving system of which the individual drivers are part. This system, as we view it, is composed of the driver, the vehicle he drives, the roadway over which both operate, the traffic they encounter, and the environment in which it all takes place. It is this system that creates the driving task. Each characteristic of the system--an oncoming car, an intersection, a stop sign, a pedestrian--individually and in combination with one another creates a situation to which the driver must respond. Each of these situations so created pretty much constitutes a task in and of itself and we have come, therefore, to talk about "driving tasks" rather than the unitary "task."

It would be handy if driving activities arranged themselves in a particular sequence so that we might use the mission profile, or in this case, "trip" profile approach in identifying driver tasks. However, such is not the case. From the time the driver leaves the curb until he stops driving, the tasks that confront him follow, with few exceptions, an unpredictable pattern. Therefore, we have been forced to search every nook and cranny of the driving system for factors that might give rise to some behavior required of the driver. These behaviorally "significant" characteristics must then be examined in combination with one another to see where their interaction creates additional requirements. The

"significant interactions" must in turn be examined in light of other factors for three, four, and five factor interactions. Fortunately, once you get beyond four or five factors, the introduction of an additional factor does not generally add to the task.

The analysis goes beyond the vehicle control behaviors that generally concern this group in order to include all behaviors that are related to the safety, efficiency and responsibility of vehicle operation. These three factors form the principal criteria for determining the relevance of individual behaviors to the driving system. Among the off-road behaviors that we see as related to these criteria are such activities as maintenance and inspection of the vehicle, reporting accidents and, of course, the consumption of alcohol.

The use of a rational analytic approach is intended to provide us a comprehensive identification of the tasks that confront drivers. It is not, however, our sole approach. We are supplementing the analysis with whatever additional information of an empirical sort we can lay our hands on. The shortcoming of the empirical approach is that (a) what is available through the organized literature and elsewhere tends to concentrate on a few selected tasks such as car following or sign detection, and (b) we simply do not have sufficient resources to fill the large gaps. We have undertaken an extensive review of the literature to secure items of information related to the nature of the driving task, driver performance, or the skills, knowledges, attitudes, and habits that underlie driver performance. The closest we will come to empirical research of our own is (a) a study of approximately 500 accident records or descriptions of antecedent driver behaviors, and (b) a study of detailed driver observations collected by others, particularly those preserved on film. The results of these two activities will be fed into the formal analytic process.

The behaviors identified through the foregoing combination of analytic and empirical approaches will be arranged into some sort of logical hierarchy. Since it is our intention to derive the classification scheme from the behaviors themselves, there is little I can say about it in advance. Once behaviors have been organized, they will then be analyzed into the specific responses of which they are constituted. This will be done at a level of description appropriate to our ultimate objective, the development of driver education objectives. Naturally, descriptions of finger movements, scanning patterns, or internal mental processes are not helpful to, or even usable by driver education teachers in the conduct of their instruction. Therefore, the level of analysis will be considerably less detailed than those engaged in simulation are accustomed to dealing with.

Once the task list is assembled, it will be submitted to a group of traffic authorities who will review it to (a) determine the adequacy of the prescribed behaviors, (b) evaluate criticality of the behaviors to specified system criteria (traffic flow, safety, individual responsibility), and (c) prescribe suitable standards of performance. The list of critical

driving behaviors emerging from this evaluative activity will serve as a basis for the establishment of instructional objectives. These instructional objectives will take two forms:

> Performance Objectives--descriptions of behavior and levels of performance appropriate to graduates of driver education courses.
>
> Enabling Objectives--descriptions of knowledges, skills, attitudes, and habits needed to enable students to attain and maintain performance objectives.

The final phase of the study will be the development of prototype evaluation instruments capable of assessing the degree to which instructional objectives have been realized.

Of what value will the results of the analysis I have described be to those concerned with simulation of driving tasks? A task analysis, of course, is a process and must therefore be tailored to the requirements of the product that is to be generated from it, in our case, a set of instructional objectives. As I pointed out, the level of detail is likely to appear superficial from your standpoint. For example, someone concerned with simulating the task of passing another car would, I assume, focus upon cues involved in the perception of relative speeds and distances as well as the processes by which these cues are combined to reach a judgment about the safety of passing. However, such a detailed treatment of the task would be of little value to the driver instructor who is only prepared to deal with that which he can manipulate directly.

While there is little that those concerned with simulation can draw from the depth of our analysis, I hope that there is something to be gained from its breadth. A question that frequently arises in evaluating the feasibility of a particular simulation approach is just what portion of the population of driving tasks is capable of being handled through that approach. I know some years ago, when we were engaged in a project having to do with the evaluation of motion picture simulators for training, we asked this question and found that we could not answer it because we lacked anything approximating a complete inventory of driving tasks. The question assumed particular importance due to what we felt was a bias on our part to view the driving task in terms of our approach, that is, a tendency to neglect consideration of situations with which we were not prepared to deal though motion pictures. It was not conscious avoidance of such behaviors; just a failure to consider them at all. Perhaps others are more successful in being objective than we were--although I wonder, for example, whether the role of moving traffic seems as important to one who is involved in development of terrain models for TV or point light source simulators as it is to one who is preparing a motion picture display.

Even special purpose simulators are not immune to this problem. Does the investigator who reduces a car following task to a model car on a moving belt do so in recognition of all that its real world counterpart involves? Is he really aware of the way in which characteristics of the roadway, other traffic, or the peripheral environment affect the task which he is simulating?

I am hopeful that we can provide a means by which an investigator concerned with any particular task can acquaint himself with the many facets of that task before he considers its simulation.

A second contribution I hope our analysis will be able to make to the simulation art is through the attempt to organize some of the information now available concerning the nature of driving activities. While our fundamental approach to the identification of driving behaviors is analytical, we have undertaken a fairly extensive survey of the literature bearing upon driving behavior. Like other aspects of our program, the literature survey focuses upon that which is relevant to driver instruction. This information includes descriptions of what is appropriate behavior, quantitative parameters of performance, the effect of behaviors upon our specified system criteria, the frequency with which the behaviors are called for, characteristic levels and ranges of driver performance, and information relating to the knowledges, skills, attitudes, and habits that underlie driving behavior. The information will be integrated into the hierarchy of tasks in order to create a functionally organized file of behavioral information.

The final feature of our program that may prove of interest to the simulation coterie is the evaluation of tasks in terms of criticality. Generally speaking, a simulator designer is more concerned with the functional similarity of the simulated to the real world task than he is the importance of the task itself to some further criterion. The latter issue would be of more concern to the researcher or practitioner using the simulator.

However, a part of our evaluation of task criticality will include the setting of performance standards for tasks. These standards will consist of critical levels of time and accuracy as well as levels of reliability, that is, the minimum acceptable likelihood that the task will be performed within the specified levels of time and accuracy. This approach is based upon the assumption that the more critical is the task, the higher should be the standard of performance. The setting of performance standards, however arbitrary they may be, provides the driving instructor with a specific goal to be attained and thereby aids him in deciding how as well as to what degree to cover certain tasks. These standards will also provide him a means of determining whether an individual student upon completing his instruction is "qualified" to take to the road. This we view as somewhat more useful to the instructor than a relative judgment of criticality.

Now how helpful it is to have a standard of performance prescribed from the viewpoint of overall transportation system requirements I don't know. Such standards should certainly be of interest if the simulator is intended for instructional applications. Should it be judged, for example, that proper car following involves no less than two and no more than three seconds separation between vehicles, and that these levels should be maintained at a probability level of .9 for any five minute period, it would seem that the simulator display must be capable of depicting distance cues with sufficient fidelity to permit such a level of accuracy to be attained.

VT 019 304

VT 019 304
VOSE, GEORGE D.

A SURVEY OF VOCATIONAL EDUCATIONAL NEEDS OF SOUTHERN PENOBSCOT COUNTY. FINAL REPORT.

BANGOR SCHOOL DEPT., MAINE.
BUREAU OF ADULT, VOCATIONAL, AND TECHNICAL EDUCATION (DHEW/OE), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 5APR72 37P.

DESCRIPTORS - *COMMUNITY SURVEYS; *AREA STUDIES; *EDUCATIONAL NEEDS; *VOCATIONAL EDUCATION; PROGRAM IMPROVEMENT; EMPLOYMENT PATTERNS; *PROGRAM PLANNING; PARENT ATTITUDES; STUDENT ATTITUDES; EMPLOYER ATTITUDES
IDENTIFIERS - *SOUTHERN PENOBSCOT COUNTY MAINE

ABSTRACT - THIS STUDY WAS CONDUCTED TO: (1) DETERMINE THE TRAINING AND JOB SKILLS NEEDED BY EMPLOYERS IN THE SOUTHERN PENOBSCOT AREA, (2) DETERMINE THE NEEDS AND INTERESTS OF STUDENTS RELATIVE TO VOCATIONAL EDUCATION AT THE SECONDARY LEVEL, (3) DETERMINE PARENT OPINIONS RELATIVE TO WHAT IS NEEDED IN THE AREA OF VOCATIONAL EDUCATION, AND (4) ROUGHLY ESTIMATE PERSONNEL TURNOVER AND WILLINGNESS OF EMPLOYERS TO COOPERATE WITH VOCATIONAL EDUCATION FACILITIES BY ACCEPTING STUDENTS FOR TRAINING. DATA WERE OBTAINED THROUGH QUESTIONNAIRES. FINDINGS INDICATE THAT: (1) THERE IS A NEED FOR A REGIONAL TECHNICAL-VOCATIONAL CENTER FOR THE SOUTHERN PENOBSCOT COUNTY AREA, (2) FOUR PROGRAMS WERE OF GREATEST INTEREST: TRADE AND INDUSTRIAL ARTS, BUSINESS AND OFFICE OCCUPATIONS, AGRICULTURAL EDUCATION, AND HEALTH OCCUPATIONS, AND (3) IT IS ASSUMED THAT THE JOB TURNOVER RATE WILL REMAIN STABLE. IN AN EFFORT TO MAKE PLANS FOR THE CENTER, INDIVIDUAL SCHOOLS WERE GIVEN THE RESPONSIBILITY OF CONDUCTING A MORE THOROUGH SURVEY OF THE INTERESTS AND NEEDS OF THE COMMUNITY. (SN)

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FINAL REPORT

Project No. 5

A Survey of Vocational Educational Needs of Southern Penobscot County

Conducted Under
Part C of Public Law 90-576

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ATE 192004

April 5, 1972

1769

FINAL REPORT

Project No. 5

A Survey of Vocational Education Needs of Southern Penobscot County

Conducted Under
Part C of Public Law 90-576

The project reported herein was performed pursuant to a grant from the Bureau of Adult, Vocational, and Technical Education, Office of Education, U. S. Department of Health, Education, and Welfare. Grantees undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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July 12, 1972

1970

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PREFACE

In May of 1972, the Bangor School Department, Office of Research and Evaluation began a study to determine the vocational education needs of Southern Penobscot County. The study was funded under the authority of the Vocational Education Amendment of 1968, P.L. 90-576

This report presents the results of that study. These results provide a foundation for the planning of improved vocational education for the students of the Southern Penobscot County Region.

The researchers express their appreciation to all the parents, teachers, students, and businesses whose cooperation made this "Survey of Vocational Education Needs of Southern Penobscot County" possible.

ACKNOWLEDGEMENTS

One cannot complete a survey of this nature without the help of many people. We wish to express our appreciation to the principals, guidance people and teachers of the high schools in Southern Penobscot County. These persons administered the student questionnaires during a very busy time of year. We thank the parents who returned questionnaires and especially those who volunteered to serve on committees.

We are most appreciative of the cooperation shown by the many business people who took the time to get and return the information we needed. It was most gratifying to discover the large number of the members of the business community who are truly interested in the education of our young people.

Special mention must be made of Steve Sargent who did the leg work and compiled the report, Mary Branscombe who made the tally marks and did the typing, and Dr. George Prescott who kept us on the right track and was not disturbed by the lack of chi squares.

George D. Vose
Project Director

BACKGROUND

A study conducted by the Maine State Department of Education Bureau of Vocational Education to determine the need and feasibility of expanding secondary and adult Vocational education in selected regions of the state found that existing technical-vocational centers primarily serve urban areas, while rural areas are being neglected. As a result of this finding, the Bureau recommended that there be regional groupings designated by geographic boundaries and that the school districts within them should be approved and designated as regions for vocational education. One of these regions is Southern Penobscot County, which contains schools in Bangor, Brewer, East Corinth, Hampden, Hermon, Old Town, and Orono.

Students not planning post secondary training need to have available course choices that will provide entrance level skills upon the completion of high school. After the 1970-71 school year, forty percent of the students getting jobs after being graduated from Bangor High School, had been in the college course. Would they have elected a vocational course had one been available? What courses do they want? What do the students think of the area concept of vocational education versus programs in their own schools? What are parent and employer opinions relative to vocational and area needs?

It was felt that input from students, parents, and employers was necessary to effectively plan a viable program for the Southern Penobscot County Region.

PROJECT OBJECTIVES

1. To determine the training and job skills needed by employers in the Southern Penobscot area.
2. To determine the needs and interests of students relative to vocational education at the secondary school level.

3. To determine parent opinions relative to what is needed in the area of vocational education.
4. To determine a rough estimate of personnel turnover and willingness of employers to cooperate with vocational education facilities by accepting students for training.

STUDY METHODOLOGY

The overall approach consisted of four elements: (1) the administration of a vocational interest questionnaire to all Southern Penobscot Region students in grades nine, ten, and eleven; (2) the identification of parent information concerning their own student and vocational education, as well as vocational education in general; (3) the identification of area business needs relative to the types of training necessary for positions in their firms and how this training could best be provided, and; (4) the analysis of all the questionnaires and interview results. The analysis of results consisted of eight basic phases to determine:

1. Overall, and for each school, the number of students who would seriously consider attending an area technical-vocational center.
2. By school and grade which vocational programs the students were most interested in attending.
3. If the parents feel that a technical-vocational center is needed for the area and which programs they feel should be included.
4. If the parents felt that a vocational center would help keep more students in school.
5. Business attitudes relative to the developement of a technical-vocational center for the region and what programs they felt were necessary to prepare students to meet the area business needs.

6. The approximate yearly turnover in personnel within different area job categories.
7. Who and how many parents and/or employers would be willing to consider serving on an advisory committee to plan for the implementation of vocational programs.
8. Which businesses would be willing to consider accepting students for training.

Student Vocational Interest Survey

To ascertain student interest in attending an area technical-vocational school at a secondary level, a questionnaire was developed. (Appendix A-1) This form was also designed to obtain information relative to which vocational programs the students were interested in taking. The programs were briefly described for the students on the questionnaires. The program selection offered was derived by using the major programs that currently are offered in the existing regional technical-vocational centers in the state.

The questionnaire was administered to a ninth grade class to see if any students had questions relative to the information required. The students had no trouble filling out the questionnaire and this indicated that the questionnaire design was adequate for the survey of students.

The questionnaires were sent to each of the secondary schools in the Southern Penobscot Region and administered to the ninth, tenth, and eleventh grades by the teachers. The questionnaires were to be returned whether or not the student indicated an interest in attending a technical-vocational center. A total of 3,362 students completed and returned the questionnaire.

Parent Interest Survey

A parent questionnaire (Appendix A-2) was developed to determine information relative to their occupation, opinions regarding the need for a technical-vocational

center in the geographic area, areas that they thought should be included in a vocational education program, whether or not they thought a technical-vocational center would keep more students in school.

The questionnaire was sent out to 425 parents of students in grade ten and included a return-addressed stamped envelope. Four hundred twenty-five is approximately 25% of the parents of tenth grade students in the area. The selection of parents was random and proportional to the enrollment of the students. Selection was made from student office record files.

Of the 425 questionnaires distributed, 143 were returned. This constitutes approximately a 34% return.

Survey of Businesses

A third questionnaire was developed to be sent out to the businesses in the area. This questionnaire was designed to seek answers concerning business attitudes relative to the type of training needed for positions in their firms and in the general area, and how this training could best be provided. (Appendix A-3)

There were 122 businesses hiring Bangor students over the last three years. These businesses and enough others to constitute a sample of approximately three hundred were selected to receive questionnaires. A business questionnaire return of approximately 30% was anticipated and proved to be a true estimate. Of the remaining businesses that did not respond, seventy (30%) were chosen to be interviewed in person. The total return consisted of 161 completed business questionnaires or 54% of the businesses contacted.

SURVEY RESULTS

Student Interest in a Technical-Vocational Center

The student questionnaires were completed and returned by a total of 3,632 students. The total enrollment of the schools in grades 9, 10, and 11 is 4,579. The number of questionnaires completed by the students constitutes a 79.3% return.

Of the 3,632 students returning questionnaires 1,791 (49.5%) replied that they would seriously consider attending an area technical-vocational center.[1] There were wide differences in student interest among the various schools in the area as shown in Table I.

TABLE I

Percentage of Students Expressing an Interest in Attending a Technical-Vocational Center.

Community	% Interested in Attending
Bangor	34.5%
Brewer	53.7%
Hampden	51.1%
Hermon	54.4%
Central	75.6%
Old Town	64.4%
Orono	28.0%

Student Interests in Technical-Vocational Programs

The 1,791 students who indicated that they were interested in attending a technical-vocational center were further asked to indicate the program that they were most interested in studying. They were given the following choices of programs: (1) Agricultural Education, (2) Distributive Education, (3) Business and Office Occupations, (4) Trade and Industrial Occupations, (5) Health Occupations, (6) Home Economics - Gainful Employment, and (7) Other - Write In.

Table II presents the number of students who indicated that they were interested in studying one of the programs.[2]

[1] Responses separated by school and grade are presented in Appendixes B-1, B-2, and B-3.

[2] Responses separated by school, grade, and program are presented in Appendix C-1. Responses totaled for school but separated by grade and sex are presented in Appendix C-2.

TABLE II

Student Program Interests

Program	N	Rank
Agricultural Education	351	3
Distributive Education	178	5
Business & Office Occup.	387	2
Trade & Industrial	590	1
Health Occupations	315	4
Home Economics - Gainful Employment	139	6
Total	1,960	

Some students checked more than one program of interest while others wrote in programs of interest that were able to be placed in one of the six categories. This explains why the total number of students interested in at least one of the programs (Table II) is higher than the total number of students who indicated that they would consider attending a technical-vocational center.

Parent Questionnaire Results

Of the 425 questionnaires distributed to the parents in the area, 143 (Approx. 34%) were returned. The questionnaires contained two questions relevant to vocational education for secondary school students.

1. "Do you see a need for a technical-vocational center in this general area?"
2. "In your opinion should each high school provide its own technical-vocational programs?"

The parents were also asked to describe the reasons for their answers. The assumption made by the persons who designed the questionnaire was that if question one was answered "yes", question two would be answered "no" and vice versa. Some parents answered "yes" to both questions and their narrative reasons indicated that they thought question one meant a technical-vocational center at the post secondary level. For this reason many of the questionnaires that were returned were considered invalid and unusable. Eighty-eight (61.5%) of the questionnaires that were returned were

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usuable for evaluating parent opinions relative to a technical-vocational center.

Ninety-five point five percent of the usable questionnaires indicated that the parents felt that there was a need for a technical-vocational center in the general area, while the remaining 4.4% felt that each separate high school should provide its own technical-vocational programs.[1]

The parents were also requested to check the program areas they thought should be included in vocational education regardless of whether the programs were in a technical-vocational center or in the industrial high schools. All 143 of the questionnaires returned were usable for compiling the responses.

The total response by program is given in Table III:[2]

TABLE III

Parent Program Interest

Program	N	Rank
Agricultural Education	110	2
Distributive Education	81	5
Business & Office Occupations	105	4
Trade & Industrial Occupations	133	1
Health Occupations	109	3
Home Economics-Gainful Employment	79	6

The usable questionnaires indicate that the parents feel that there is a need for a technical-vocational center in the geographic area. Thirty-four of the parents, in fact, indicated an interest in serving on an advisory committee to help develope a technical-vocational center for the area.[3]

The parents were also asked if they thought that practical vocational education would help keep students in school. Approximately 92% of the parents replied "yes".

[1] Results separated by towns are presented in Appendix D-1.

[2] Responses separated by town are presented in Appendix D-2.

[3] Parent names, separated by town, are recorded in the Office of Research & Evaluation, Bangor School Department, and will be made available to appropriate school officials for planning purposes.

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Business Interest in a Technical—Vocational Center

A total of 161 businesses in the Southern Penobscot County Region responded to the questionnaire either by mail or through an interview. This return of 54% should hopefully give a valid indication of business needs relative to trained personnel and a overview of business feelings concerning the need for a technical-vocational center for the region.

The returned questionnaires from the firms were separated into areas of similar interest, (e.g. all the retail stores were put together), and then grouped in a general classification for vocational education programs, (e.g. Automotive Mechanics, Construction, Heating, etc., were grouped under the heading Trade & Industrial Programs). The results were analyzed to determine business interests relative to:

1. The need for a technical-vocational center for the area;
2. Willingness to consider serving on an advisory committee for programs within such a center;
3. Willingness to consider accepting students for training;
4. Turnover of employees.

Need For a Center

One hundred thirty-seven, (85%) of the businesses that replied answered that they thought, from their knowledge of the area, that a technical-vocational center is needed. Five (3%) indicated that they thought such a center was not needed and nineteen (12%) were unsure.[1] These results indicate that businesses are interested in schools training students at a secondary level. The general trend of replies supported the thought that a technical-vocational center for the region would be a means of training more students for the immediate world of work.

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[1]Responses separated by general business categories are presented in Appendix E-1.

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Advisory Committee

The major objective of any technical-vocational center is to train the students so they will have the skills necessary to be employable. Since the individual businesses know best which skills and knowledge they require of their employees, it is logical that they, the business people, should have a part in planning the programs within a center. For this reason, the business persons were asked if they would consider serving on an advisory committee for planning programs.

Thirty-four percent of the businesses expressed a desire to consider working with a planning committee, while forty-two percent replied that they would not, and twenty-three percent were uncertain. (Appendix E-1) The reasons most given as the foundation for negative answers were that the employers lacked the time to serve on another committee or felt that they were not qualified to do so. The somewhat low percentage of businesses willing to help with the planning is misleading for there were fifty-five different persons who expressed a willingness to help.[1] This large a concentration with diversified areas of expertise and interests is probably adequate for any immediate planning purposes. It is also possible that some of the business persons who responded that they were unsure about serving on a planning committee, would serve if they were told in more detail what their functions would be while on such committees.

Accepting Students for Training

A goal of vocational education is to provide the students with practical knowledge and skills that he can actually apply on the job. These skills can best be developed through classroom-lab instruction and actual work experience. Hopefully the students at a regional center would be able to receive on-the-job training

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[1] The names of the persons and businesses willing to consider serving on planning committees are on file at Bangor School Department, Office of Research & Evaluation, and will be made available to appropriate school officials for planning purposes.

within an area business that is related to their specific interests and training within the school. A student within an Automotive Mechanics program, for instance, would attend school for part of the day and spend the remainder actually working on the job. (e.g. in a garage) There he could utilize the skills that he had obtained while in school, and receive more relevant training while working.

Approximately fifty percent of the businesses that responded indicated that they were receptive to the idea of accepting students for training.[1] Twenty-three (14.3%) businesses replied that they were unwilling to consider training students. Fifty-seven firms (35.4%) were unsure and expressed a desire to be provided with more specific information relative to students and programs. (Appendix E-1) The four reasons most often given by the businesses that responded negatively or as uncertain were:

1. Union limitations
2. Age limitations for insurance protection.
3. No need for additional personnel.
4. Prior bad experience with students.

There are businesses willing to have students for training in all the job categories surveyed. If an on-the-job auxiliary training program were incorporated and were successful, the number of businesses willing to become involved would probably increase. Such a program would necessarily involve:

1. Careful planning by a coordinator for student placement and supervision;
2. Constant contact between the school and the employer;
3. Implementation of business suggestions relative to curriculum development.

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[1]The names of businesses willing to consider accepting students for training are on file at the Office of Research & Evaluation, Bangor School Department, and are available to appropriate school officials for planning purposes.

Turnover of Personnel

In the interest of trying to meet both student employment and area needs it would be unrealistic to train two hundred auto mechanics a year if there were employment opportunities for only five. In an effo rt to prevent this type of error from taking place, the businesses were asked what specific jobs needing specialized training they felt were needed i n the area and could be provided at a technical-vocational center.

Part of the business interview was to determine the approximate yearly turnover of personnel within each business. Each business was asked how many employees it had as of May 1972 and how many of these had been with the business for at least one year. The difference between these totals was considered the "turnover" of personnel within the business for the past year. In most cases, the figure is an approximation si nce determining the exact numbers would have required more time than the interview would allow. Assuming that the turnover would remain relatively stable from year to year, the figure for the total turnover of personnel within a business would represent the future yearly employment possibilities in the area that businesses would have to offer. The results are presented here in Table IV for the general programs mentioned in the questionnaire.[1]

TABLE IV

Approximate Business Turnover

Program	N. Related Businesses Responding	Total Employees	Total Turnover	%
Agricultural Education	3	Seasonal	?	?
Distributive Education	32	1,062	215	20.2%
Business & Office Occup.	20	2,174	289	13.3%
Trade & Industrial Occup.	59	2,352	324	13.8%
Health Occupations	11	1,844	456	24.7%
Home Economics	29	1,112	223	20.1%
Miscellaneous	7	197	7	3.6%

[1] Responses separated by more specific occupational areas are presented in Appendix E-1.

The results indicate that the businesses that responded to the questionnaire would provide approximately 1,500 employment opportunities a year in the Southern Penobscot County Region. Since these figures are compiled on the basis of a 54% return, it is logical to assume that there are actually many more employment opportunities each year in the area than are indicated by the study results.

Only three businesses directly related to Agricultural Education responded to the questionnaire. Due to this small return and the seasonal nature of those that did respond, the returns give no indication of the training needs and employment possibilities within this vocational category.

The student interest in the area of Agricultural Education indicates that as extensive survey of agricultural needs for training and employees must be undertaken before any conclusions can be made relative to the implementation of an agricultural education program.

The following are the major types of skilled persons that the businesses in the area indicated were most needed in the region and could be prepared through a vocational education center. The number after the job classi ication represents the number of different businesses indicating a need for this type of skilled person.[1]

Salesmen (whse. & ret.)	17	Maintenance Men	7
Shipping & receiving	3	Clerical persons	16
Bookkeepers	5	Auto Mechanics	49
Auto Body Repair	6	Carpenters	24
Masons	7	Plumbers	17
Electricians	21	Sm. Eng. & App. Rep.	20
Welders	6	Lg. Equip. Oper.	6
Nurses Aides	4		

[1] Appendix E-2 presents the entire list of jobs that businesses felt needed more skilled people to fill them, and the number of times they were mentioned by different businesses.

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Table V shows the number of students in grades nine and ten who are interested in each program, and the projected job openings in businesses related to each program. Grade eleven is not included here since the students will be graduated before any new vocational education programs can be instituted.

TABLE V

Student Program Interest and Related Job Turnover
(Grades Nine & Ten)

Program	Grade 9	Grade 10	Total N	Related Job Turnovers
Agricultural Education	121	127	248	?
Distributive Education	85	45	130	215
Business & Office Occup.	140	124	264	287
Trade & Industrial Occup.	238	203	441	324
Health Occupations	109	107	216	456
Home Economics-Gainful Employment	58	41	99	223

SUMMARY

If the assumption that the personnel turnover will remain stable and equals future yearly job opportunities is true, it is apparent, with the exception of positions related to Agricultural Education, that there should be enough employment opportunities in the area so that each program graduate would be able to find a position in the field that he or she had been trained.

The apparent availability of jobs related to the vocational education programs selected by the students, when coupled with student, parent, and business needs and interests seems to be sufficient justification for further steps to be taken in planning for a Regional Technical-Vocational Center for the Southern Penobscot County Area.

It is now the responsibility of each school within the area to more specifically: (1) determine student interests relative to vocational education; (2) explain to parents, students, and potential employers the philosophy of vocational education in the state today; (3) investigate local and area business needs for

trained personnel; (4) set up advisory committees for local planning purposes; and, (5) determine the availability of on-the-job training positions, and plan for the complete coordination of this aspect of vocational education.

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APPENDIXES

Student Form

VOCATIONAL EDUCATION SURVEY

Name _____ School _____ Grade _____

Plans are being made for an area technical-vocational school to serve students in Southern Penobscot County. This would mean (if you are interested) that you could attend this area school for your junior and senior years. A school of this nature would be able to provide a wider selection of courses and better vocational training than would be possible in any one of the seven high school in the area.

A survey of businesses in the area is being done to find out what jobs, needing what training, might be available. Will you indicate whether or not you are interested in an area school.

I would seriously consider attending an area technical-vocational school

/__/ Yes /__/ No

If your answer is No, please turn in this sheet anyway. If your answer is Yes , please check the area you are most interested in studying.

/__/ Agricultural Education Programs
This program provides training for jobs in farming, floristry (flowers), landscaping, forestry, conservation, outdoor recreation (game warden), and other similar jobs.

/__/ Distributive Education Programs
This program provides training for jobs as salesmen, store clerks cashiers, shipping clerks, hotel and motel workers, service station attendants, and other similar jobs.

/__/ Business and Office Occupations Programs
This program provides training for jobs as typists, office clerks secretaries, bookkeepers, receptionists, and other similar jobs.

/__/ Trade and Industrial Programs
This program provides training for jobs in the construction trades (plumbing, carpentry, electrical work), auto mechanics, small engine repair, refrigeration , printing, and other similar jobs.

/__/ Health Occupations Programs
This program provides training for jobs as dentist or physician's receptionist, medical records assistants, nurses aides, physical therapy assistant, laboratory technician's aide, and other similar jobs.

/__/ Home Economics Gainful Employment Programs
This program provides training for jobs in food services, child care, clothing service, homemaker aide, and other similar jobs.

/__/ Other - Write in area not covered.

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BANGOR SCHOOL DEPARTMENT
BANGOR, MAINE

May 3, 1972

The School Departments of Southern Penobscot County are planning a Regional Technical-Vocational Center for the area. The need was established by a study done by the Maine State Department of Education Bureau of Vocational and Adult Education. This center is part of the overall objective of the bureau to provide facilities for any high school student in the state who wishes this kind of secondary education.

The center will probably be for juniors and seniors planning to go to work following graduation. This is about 25% of the graduating classes. The center will serve the seven high school districts in this area. The governing will be done by representatives from all school districts in Southern Penobscot County. The objective of the center will be to provide the job skills needed for the student to gain entrance to the world of work.

Plans are just under way and we are seeking help from businesses students, and parents. You are one of the 400 parents of 10th grade students we are contacting. Will you take time to answer these questions to help us with our planning?

Thank you.

Sincerely,

George Vose, Director
Research and Evaluation

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Parent Form

A-2 (cont.)

VOCATIONAL EDUCATION SURVEY

Father's Occupation _____ Mother's Occupation _____

High school your son/daughter now attends _____

1. Do you see a need for a technical-vocational center in this geographical area? Yes ☐ No ☐ Why or why not? _____

_____

2. In your opinion should each high school provide its own technical-vocational program? Yes ☐ No ☐ Why or why not? _____

_____

3. From your experience, do you think this kind of practical education would help keep students in school? Yes ☐ No ☐

4. Which of the following areas do you think should be included in a program of vocational education?

☐ Agriculture Education Programs
This program provides training for jobs in farming, floristry (flowers), landscaping, forestry, conservation, outdoor recreation (game warden), and other similar jobs.

☐ Distributive Education Programs
This program provides training for jobs as salesmen, store clerks, cashiers, shipping clerks, hotel and motel workers, service station attendants, and other similar jobs.

☐ Business and Office Occupations Programs
This program provides training for jobs as typists, office clerks, secretaries, bookkeepers, receptionists, and other similar jobs.

☐ Trade and Industrial Programs
This program provides training for jobs in the construction trades (plumbing, carpentry, electrical work, auto mechanics, small engine repair, refrigeration, printing, and other similar jobs.

☐ Health Occupations Programs
This program provides training for jobs as dentist or physician's receptionist, medical records assistants, nurses aides, physical therapy assistant, laboratory technician's aide, and other similar jobs.

☐ Home Economics Gainful Employment Programs
This program provides training for jobs in food services, child care, clothing service, homemaker aide, and other similar jobs.

☐ Other, please list. _____

If you would be willing to serve on an advisory committee, please write your name and address on line.

_____

BANGOR SCHOOL DEPARTMENT
BANGOR, MAINE

A-3

May 8, 1972

Dear Sir:

The School Departments of Southern Penobscot County are planning a Regional Technical-Vocational Center for secondary students in this area. The need was established by a study done by the Maine State Department of Education Bureau of Vocational and Adult Education. This center is part of the overall objective of the Bureau to provide facilities for any high school student in the state who wishes this kind of secondary education.

To be effective a center of this nature must be responsive to the needs of the employers it serves. We are sending this questionnaire to 300 industrial and business firms in the area (Old town to Hermon, Hampden to East Corinth) in an attempt to find out what training high school graduates need to be employable. More than half of these firms have hired high school graduates in the last three years.

Will you or an associate please take time to fill out the enclosed questionnaire to help us plan a program that will be realistic for our area.

Thank You.

Sincerely,

George Vose, Director
Research & Evaluation

GV:mb

Enclosure

Business Form A-3 (cont.)

VOCATIONAL EDUCATION SURVEY

Name of Industry or Business _____

Address _____ Tel. _____

Product or Service _____

Person Filling out Questionnaire _____

Position _____

Number of Employees as of May 1. Male _____ Female _____

About how many have been with you at least one year?

Male _____ Female ___

From your knowledge of the area, do you think a Technical-Vocational center is needed? Yes ☐ No ☐ ? ☐ Why or why not?

_____

_____

Would you be willing to consider serving on a planning committee?

Yes ☐ No ☐ ? ☐

Would you be willing to consider cooperating with a vocational school by accepting a student for training? Yes ☐ No ☐ ? ☐

Please list any specific jobs needing specialized training (such as could be provided by a Technical-Vocational Center) that would give a better selection of qualified workers.

Job	Type of Training Needed
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Additional Comments:

CONFIDENTIAL

"Would you seriously consider attending a technical-vocational center?"

STUDENT RESPONSES BY GRADE AND SCHOOL

GRADE 9

SCHOOL	ENROLLMENT	TOTAL RESPONSE	% RESPONSIVE	NO	YES	% YES
FIFTH STREET		151		89	62	41.1
UNION STREET		115		79	36	31.3
GARLAND STREET		161		119	42	26.1
BANGOR TOTAL	497	427	85.9	287	140	32.8
BREWER HIGH	377	311	82.5	145	166	53.4
ORONO HIGH	136	115	84.6	88	27	23.5
OLD TOWN HIGH	258	226	87.6	77	149	65.9
CENTRAL HIGH	82	73	89.3	22	51	69.9
HERMON HIGH	142	88	62.0	35	53	60.2
HAMPDEN ACADEMY	184	169	91.8	72	97	57.4
TOTALS		1409		726	683	
			% No 51.5	% Yes	48.5	

"Would you seriously consider attending a technical-vocational center?"

STUDENT RESPONSES BY GRADE AND SCHOOL

GRADE 10

SCHOOL	ENROLLMENT	TOTAL RESPONSE	% RESPONSIVE	NO	YES	% YES
BANGOR HIGH	488	339	69.5	208	131	38.6
BREWER HIGH	303	222	73.3	109	113	50.9
ORONO HIGH	101	88	87.1	68	20	22.7
OLD TOWN HIGH	265	203	76.6	81	122	60.1
CENTRAL HIGH	70	59	84.3	11	48	81.4
HERMON HIGH	142	142	100	83	66	44.3
HAMPDEN ACADEMY	197	162	82.2	75	87	53.7
TOTALS		1222		635	587	

% No = 52 % Yes = 48

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"Would you seriously consider attending a technical-vocational center?"

STUDENT RESPONSES BY GRADE AND SCHOOL

GRADE 11

SCHOOL	ENROLLMENT	TOTAL RESPONSE	% RESPONSIVE	NO	YES	% YES
BANGOR HIGH	384	260	67.7	160	100	38.5
BREWER HIGH	287	220	76.7	95	125	56.8
ORONO HIGH	102	81	79.4	49	32	39.5
OLD TOWN HIGH	240	175	72.9	57	118	67.4
CENTRAL HIGH	59	48	81.4	11	37	77.1
HERMON HIGH	103	90	87.4	31	59	65.6
HAMPDEN ACADEMY	162	127	78.4	77	50	39.4
TOTALS		1001		480	521	

% No = 48 % Yes = 52

C-1

STUDENT PROGRAM INTEREST RESPONSES BY SCHOOL AND GRADE

	BANGOR	BREWER	ORONO	OLD TOWN	CENTRAL	HERMON	HAMPDEN
Agriculture Education							
Grade							
9	28	39	5	17	8	10	13
10	41	24	7	18	7	15	15
11	22	26	13	23	1	7	11
Distributive Education							
Grade							
9	23	12	3	20	6	3	23
10	18	11	1	4	0	6	5
11	10	14	2	9	0	10	4
Business & Office Occupations							
Grade							
9	32	30	6	35	13	10	14
10	38	16	6	25	6	18	15
11	25	28	7	30	7	17	9
Trade and Industrial							
Grade							
9	36	50	9	62	16	23	30
10	32	41	6	46	24	18	26
11	40	18	10	35	10	15	20
Health Occupations							
Grade							
9	23	22	2	23	5	8	26
10	21	20	1	21	7	12	25
11	18	32	3	18	11	10	7
Home Economics Gainful Employment							
Grade							
9	11	18	2	11	10	4	11
10	10	4	0	8	3	8	8
11	7	5	1	8	6	8	0

STUDENT RETURNS

Student Responses by Program Checked
(Separated by Grade)

Grade 9

	Boys N	%	Girls N	%	Total N	Rank	Total %
Agricultural Education	95	22.5	26	7.9	121	3	16
Distributive Education	42	9.9	43	13.1	85	5	11
Business & Office Occ.	20	4.7	120	36.6	140	2	19
Trade & Industrial	235	55.6	3	.9	238	1	32
Health Occupations	26	6.1	83	25.3	109	4	15
Home Ec.-Gainful Employ.	5	1.2	53	16.2	58	6	8

Grade 10

	Boys N	%	Girls N	%	Total N	Rank	Total %
Agricultural Education	90	25.8	37	12.4	127	2	20
Distributive Education	25	7.2	20	6.7	45	5	7
Business & Office Occ.	20	5.7	104	34.9	124	3	19
Trade & Industrial	198	56.7	5	1.7	203	1	31
Health Occupations	12	3.4	95	31.9	107	4	17
Home Ec.-Gainful Employ.	4	1.1	37	12.4	41	6	6

Grade 11

	Boys N	%	Girls N	%	Total N	Rank	Total %
Agricultural Education	74	26.9	29	10.0	103	3	18
Distributive Education	26	9.5	22	7.6	48	5	9
Business & Office Occ.	14	5.1	109	37.5	123	2	22
Trade and Industrial	143	52.0	6	2.1	149	1	26
Health Occupations	14	5.1	85	29.2	99	4	18
Home Economics-Gainful Employment	4	1.5	40	13.7	44	6	8

PARENT QUESTIONNAIRE RESPONSES

"Do you see a need for a technical-vocational center in this geographic area?"

SCHOOL	N SENT	N RETURN	% RETURN	N USABLE	NO	YES	% YES
Bangor	132	50	38	31	2	29	93.5
Brewer	79	25	32	17	0	17	100.0
Central	27	4	15	2	0	2	100.0
Hampden	50	14	28	10	0	10	100.0
Hermon	31	13	42	8	1	7	87.5
Old Town	81	24	30	14	1	13	92.9
Orono	25	9	36	5	0	5	100.0
Misc.	—	4	—	1	0	1	100.0
Total	425	143	34	88	4	84	

Total percent "yes" = 95.5%

PARENT PROGRAM INTEREST

(Response separated by town)

Program	BANGOR (N 50)	BREWER (N 25)	CENTRAL (N 4)	HAMPDEN (N 14)	HERMON (N 13)	OLD TOWN (N 24)	ORONO (N 9)	MISC. (N 4)
Agricultural Ed.	37	22	4	11	9	20	5	2
Distributive Ed.	34	17	2	7	5	17	4	1
Business Occ.	40	18	3	11	8	16	7	2
Trade-Industrial	46	23	4	12	12	23	9	4
Health Occ.	40	20	3	11	10	17	7	1
Home Ec. Employ.	24	17	3	10	9	13	2	1

N = Total number of questionnaires returned by parents

E-1

BUSINESS RESPONSES

GENERAL PROGRAM	SPECIFIC PROGRAM	AREA NEED FOR CENTER			SERVE ON COMMITTEE			ACCEPT FOR TRAINING			TURNOVER
		Y	No	?	Y	No	?	Y	No	?	
Agricultural Ed.	Ag. Ed.	2	0	1	0	2	1	0	2	1	?
Trade and Industrial	Auto Mech.	23	0	1	10	11	3	15	4	5	77
	Build. Tr.	17	0	1	9	6	3	6	3	9	129
	Heat. & Fuel	6	0	0	1	5	0	2	1	3	8
	Manuf.	6	0	1	3	1	3	2	1	4	106
	Fr. Trans.	2	0	2	1	3	0	1	2	1	4
	Total	54	0	5	24	27	9	27	11	22	324
Business Ed.	Business	17	0	3	7	10	3	8	6	6	289
Distributive Ed.	Retail Sales	25	2	5	9	12	11	20	2	10	215
Home Economics	Food Ser.	19	2	2	6	10	7	13	1	9	170
	Home Ec.	4	1	1	0	4	2	2	1	3	53
	Total	23	3	3	6	14	9	15	2	12	223
Health Occ.	Health	11	0	0	7	2	2	9	0	2	456
Misc.	Misc.	5	0	2	2	2	3	2	2	3	7
	Total	137	5	19	55	68	38	81	23	57	1514

BUSINESS RETURNS

Positions mentioned by businesses as needing more trained persons to fill them. (The number after the position indicates how many times the position was mentioned by different businesses)

AGRICULTURE RELATED

Landscaping	1

DISTRIBUTIVE ED. RELATED

Sales	17	Counter Help	1		
Stock Control	4	Serv. Person	2		
Display & Prom.	1	Clerks	4		
Ship & Rec.	3	Whse. Manager	1		
Maintenance	7	Alterations	1		
Delivery	3	Hotel Manager	1		
Merchandising	1				
Jewelry Sales	1				

BUSINESS EDUCATION RELATED

Clerical	16	Administration	1	Male Clerical	1
Bookkeeper	5	Management	2	Bank Work	1
Receptionist (Health Center	1	Ass't Manager	1	Accountant	1
		Secretary	2		

TRADE AND INDUSTRIAL RELATED

Mechanics	49	Electricians	20	Refrigeration	2
Carpenter	24	Photographers	1	Truck Driver	1
Electronics	2	Lab. Tech.	1	Welders	6
Plumbers	16	Neg. Retoucher	1	Sheet Metal Mech.	1
Engineers	2	Blueprint Read.	1	Hv. Equip. Oper.	1
Sm. Engine and Appliance Repair	20	Custodian	1	Air Cond.	1
		Drill Foremen	1	Auto Parts	2
Elec. Maintenance	1	Lineman	1	Elec. System	1
Auto Body	6	Eng. Aides	1	Equip. Set-up	1
Alignment	2	Lg. Equip. Oper.	6	Diesel Engine	1
Upholsterers	1	Rustproofer	1	Hydraulics	1
Masons	7	Carpet Mech.	2	Elec. Mach. Op.	1
Paper Hangers	1	Stitching	1	Industry	1
Micro Meter Rd.	1	Printer	1	Brazing	1
		Power Shift Trans.	1		

HEALTH RELATED

Nurses Aides	4	Voc. Nurses	1	Dietary Func.	1
L.P.N.'S	1	St. Hosp. Workers	1	Custodian	1
Pharm. Sec.	1	Cullinary Arts	1	Clerical	1

HOME ECONOMICS-GAINFUL EMPLOYMENT RELATED

Waitress	2	Bar Tender	3	Housekeeping	1
Inter. Decor.	1	Cafe Manager	1	Waiter	1
Host	1	Meat Cutter	2	Cook	5
Baker	1	House Painter	1		

VT 019 321

VT 019 321
THE MONTANA ADVISORY COUNCIL FOR VOCATIONAL EDUCATION. SECOND ANNUAL REPORT.

MONTANA STATE ADVISORY COUNCIL FOR VOCATIONAL EDUCATION, HELENA.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 13SEP71 26P.

DESCRIPTORS - *ANNUAL REPORTS; *ADVISORY COMMITTEES; *VOCATIONAL EDUCATION; DOCUMENTATION; *STATE PROGRAMS
IDENTIFIERS - *MONTANA

ABSTRACT - SUMMARIZED IN THIS DOCUMENT ARE THE RESULTS OF AN EVALUATIVE ASSESSMENT OF VOCATIONAL EDUCATION IN THE STATE OF MONTANA. REVIEWED WERE: (1) THE APPROPRIATENESS OF THE STATE'S GOALS AND PRIORITIES, (2) THE EFFECTIVENESS OF VOCATIONAL EDUCATION IN SERVING THE PEOPLE AND THEIR NEEDS, AND (3) THE EXTENT TO WHICH PREVIOUS COUNCIL RECOMMENDATIONS RECEIVED DUE CONSIDERATION. FINDINGS AND RECOMMENDATIONS INCLUDE: (1) THE GOALS FORMULATED SEEMED TO HAVE BEEN APPROPRIATE, (HOWEVER, IT WAS IMPOSSIBLE TO DETERMINE WHETHER THEY WERE MET BECAUSE OF THE FORM IN WHICH THEY WERE WRITTEN), (2) MONTANA, AT PRESENT, HAS NO ORGANIZED SYSTEM CAPABLE OF DETERMINING NEED NOR EFFECTIVENESS, THUS IMPLYING THAT ONE NEEDS TO BE DEVELOPED, (3) THE SCOPE OF PLANNING FOR VOCATIONAL EDUCATION IS LIMITED, THEREFORE, COORDINATION IS IMPERATIVE AT ALL LEVELS, AND (4) LAST YEAR'S COUNCIL RECOMMENDATIONS WERE NOT GIVEN THE CONSIDERATIONS WHICH THEY WARRANTED. TABLES SUPPLYING DETAILED INFORMATION ARE APPENDED. (SN)

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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SECOND ANNUAL REPORT

MONTANA ADVISORY COUNCIL

for

VOCATIONAL EDUCATION

Vocational Education Amendments of 1968

Public Law 90-576

September 13, 1971

VT019321

MONTANA ADVISORY COUNCIL FOR VOCATIONAL EDUCATION

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Wyola

HELENA, MONTANA 59601

September 13, 1971

Governor Forrest H. Anderson
State Capitol
Helena, Montana 59601

Dear Governor Anderson:

The Advisory Council for Vocational Education is pleased to transmit its Second Annual Report on Vocational Education in Montana. This report, made in accordance with P.L. 90-576, is forwarded to the State Board of Education for its use and for transmittal to the United States Commissioner of Education and the National Advisory Council on Vocational Education. As you know, the law provides that when forwarded, this report may be accompanied by any comments that the State Board thinks are appropriate.

We believe that implementation of the recommendations contained in this report will be beneficial to vocational education and, in turn, to the people of Montana.

Respectfully,

Linda Skaar

(Mrs.) Linda Skaar
Chairman

SECOND ANNUAL REPORT

MONTANA ADVISORY COUNCIL FOR VOCATIONAL EDUCATION

SUMMARY AND RECOMMENDATIONS

I. How appropriate were the State's goals and priorities as set forth in the State Plan? Were these goals measurable? To what extent were the goals met?

Goals listed in the Montana Plan for Vocational Education can seldom be argued with. For example, it proposed more vocational programs in areas where school dropouts and youth unemployment were the highest. It called for construction of a post-secondary vocational education center during the year. Enrollments were to be increased.

Frequently goals were not stated in measurable form. Data presented was sometimes inaccurate or incorrect. When base data is inaccurate, it is impossible to determine whether goals were met.

The most crying need in vocational education planning for Montana is accurate data on employment opportunities, school drop-outs, and the disadvantaged.

It appears that during the past year Montana has made steady progress toward fulfillment of the goals of the State Plan.

II. What was the effectiveness of vocational education in serving the people and their needs?

Vocational education is not the total answer to all educational and manpower problems. It is, however, a significant part of the answer. We need a systematic method of determining the needs of the people, where these people are, and who they are. This information must be compared with the capabilities of vocational education in order to determine its effectiveness in serving the people and their needs. Like most other states, Montana presently has no organized system capable of producing this type of information.

The past year's evaluation by the Council has brought to our attention the improved, but still limited, scope of planning for vocational education. Coordination of training opportunities at the national, state and local levels is imperative.

Many good things are being done to meet the needs of the people through vocational education, but there are still some serious deficiencies. More vocational education opportunities are available to more students at all levels than ever before. The question is, will the graduate be able to get and hold a job?

III. The Council is disappointed that greater consideration was not given to last year's recommendations. We are optimistic, however, and look forward to

the presentation of this Second Annual Report. We hope for opportunity to discuss with the policy and decision makers in vocational education the needs of people and ways in which these needs can be met.

From our evaluation of vocational education in Montana during the past year we submit the following recommendations:

I. Data for Program Planning

The need is apparent to the Council for additional and valid planning for vocational education programs. The Council recommends that:

A. Greater emphasis should be placed on securing more valid data on dropouts.

B. The Office of the Superintendent of Public Instruction should give first priority to making the Enrollment-Exit-Followup system fully operational.

C. Job market information must be collected on a national, regional, state, and local basis. The cooperation of all agencies with such information is needed.

II. Financial Support of Vocational Education.

The need for additional financial support of vocational education is a concern of the Council. It therefore recommends that:

A. The State Board of Education seriously review the present priorities for expenditure of state education dollars and place additional emphasis on state support of vocational education.

B. The federal government be encouraged to increase its financial support of vocational education to an amount more nearly equal with that provided by the state.

C. All school districts, especially those in eastern Montana, be encouraged to use the optional mill levy for adult vocational education. Use of this levy can help to bring vocational education closer to those people who cannot reach the area centers.

III. Development of Vocational Education Facilities

Availability of meaningful vocational education is of prime concern to the Council. It therefore recommends:

A. Construction of additional facilities for post-secondary vocational education centers is crucially needed. The State Board should make every effort to resolve the problem of construction of the proposed Great Falls building.

B. The State Board take action to resolve the problem of imbalance in utilization of post-secondary facilities by one or two levels of vocational education programs.

IV. Disadvantaged and handicapped students.

The Council recommends that the state place a greater emphasis upon meeting the needs of the disadvantaged and handicapped.

V. Involvement in Manpower Development

Involvement of vocational education in manpower development is of such importance that the Council recommends that:

The State Board of Education utilize information from local advisory committees and the Office of the Superintendent of Public Instruction, and cooperate with the Montana Manpower Planning Advisory Council in coordinating program planning and development of vocational education programs throughout the state, and also make known to other manpower planning groups the availability of training through existing state vocational education programs.

VI. Private and Public Schools

The need of improved relationships between all educational agencies involved in vocational education is necessary to best meet the needs of the people. Therefore the Council's recommendation is that the State Board of Education take the leadership in increasing and improving communication with private vocational schools.

VII. Job Placement of Students

Students need to be provided much improved job placement services. The Council recommends that the public schools make job placement of students as important a responsibility of theirs as the actual training and education of the student.

VIII. Mountain-Plains Educational Center

Because of the potential impact of the Mountain-Plains Educational Center, located at the former Glasgow Air Base, it is recommended by the Council that the Board of Directors of the Center establish an advisory committee to the Center, and it is further suggested that the Montana Advisory Council for Vocational Education be represented on that committee.

IX. Publicity for Vocational Education

The Council is concerned by the continued lack of awareness of vocational education opportunities on the part of many people. It is recommended that additional publicity, accurate and timely, be given to vocational education.

X. Orientation to the World of Work

The Council recommends that elementary schools make a strong and organized effort to provide students with an awareness of vocations which may be available to them and how the educational system is able to assist them in preparing for the world of work.

XI. Standard Course Titles with Description

One of the concerns of the Council is the lack of standard course and program titles with descriptions among schools offering post-secondary vocational education. It is the Council's recommendation that the State Board of Education establish standard program and course titles with description. These titles should be used to refer to every program in all descriptive literature of program offerings.

XII. Truth in Advertising

The Advisory Council maintains that each post-secondary school is responsible for the advertisement of its vocational education programs. In the past, some advertisement has not been true or accurate. The State Board should take appropriate action to discourage post-secondary schools from advertising courses which they do not actually offer.

XIII. Recommendations from the First Annual Report

The Council recommends that the State Board of Education review and give further consideration to the recommendations contained in the First Annual Report of the Montana Advisory Council for Vocational Education, submitted in September, 1970.

I.

HOW APPROPRIATE WERE THE STATE'S GOALS AND PRIORITIES AS SET FORTH IN THE STATE PLAN? WERE THESE GOALS MEASURABLE? TO WHAT EXTENT WERE THE GOALS MET?

As presently stated many of the goals of the Montana Plan for Vocational Education are difficult to measure, others are in the process of being measured, while a third group is in a position that allows evaluation. We will limit ourselves to this third group for the purposes of this report.

A. The State Plan sought a concentration of post-secondary vocational programs in areas of the state with the highest rates of youth unemployment and school dropouts.

The areas where these rates were the highest were those in which post-secondary vocational education programs were already available.[1] The number of programs offered and the number of students enrolled has increased in these areas over the past year. Presently we have no way of knowing how many dropouts the schools are serving--only that they are training more students. Data on school dropouts is uniformly under-reported throughout the state, reflecting the need for a statewide system to report accurately all school leavers.[2]

Unemployment data available from the Employment Security Commission covers only part of the job market and does not reflect the total employment picture. The best data available indicates that the post-secondary programs are in the areas where most unemployed are reported.

We recommend that greater emphasis be placed on securing more valid data on dropouts and employment. Such data is necessary to good planning for vocational education.

B. The State Plan called for research to be done in several areas during the fiscal year 1971. Specific goals were:

1. The development of the Enrollment-Exit-Followup study of all vocational education students.

2. Identification of the handicapped, disadvantaged and unemployed youth in the state.

3. Survey of community college vocational-technical education.

4. Follow-up of success of consumer home economics programs.

Progress has been continued in the Enrollment-Exit-Followup study and participation by the schools is now required as a pre-requisite to funding. This system, when completely operational, should provide critically needed data relating to vocational education. Without such data it is virtually impossible to provide a valid evaluation. The other research projects which were to be conducted in fiscal 1971

[1] See Appendix I.
[2] Ibid.

have been moved back to fiscal year 1972.

The Council considers each of these projects necessary for the evaluation of vocational education. We look forward to their early completion.

C. The State Plan predicted a decrease in the total number of schools offering vocational education during fiscal 1971.

According to the information made available to the Council, there was an increase of eleven secondary schools offering vocational education during fiscal 1971.

Of concern is the fact that only 65% of the secondary schools in Montana are reported as offering any kind of vocational education. Furthermore, of those offering vocational education, nearly half have only one or two programs, usually home economics and vocational agriculture. This data clearly indicates that without a substantial increase in the number of secondary schools offering more types of training, the needs of secondary students for vocational education cannot and will not be met.

In view of this need for more vocational education opportunity, the Council recommends that the State Board seriously review the present priorities for expenditure of state education dollars and place additional emphasis on state support of vocational education.

D. The State Plan objective for construction calls for continuing the construction of facilities for vocational education, and specifically the construction of one Post-Secondary Vocational Education Center during the 1971 fiscal year.

Lack of available funds prevented the construction of the Post-Secondary Vocational Education Center planned for fiscal 1971. Late in the year the 42nd Legislative Assembly appropriated $1.2 million for construction of post-secondary vocational education facilities. Plans, including architectural drawings, have been prepared, but actual construction may again be delayed because of a question regarding the legality of a school district bonding itself for construction of a Post-Secondary Vocational Education Center.

We strongly recommend every effort be made by the State Board to expedite the resolution of this problem and resume construction of facilities which are so crucial to vocational education in Montana.

E. A State Plan goal was to increase the fiscal 1971 vocational education enrollment in the secondary schools by 4% over fiscal 1970 enrollments.

This goal is difficult to evaluate accurately in terms of the success achieved in reaching its objective. Indications are, however, that the goal was reached.

Enrollment figures currently available show a decline in the number of students in the secondary school programs for fiscal year 1971. A new computerized data gathering system has eliminated a "duplicated count", and the figures for fiscal 1971 are considerably more accurate than those of previous years.

The fact that more vocational education is being offered in more schools leads us to believe that enrollments actually increased. Next year the new data gathering system will allow the Council to assess accurately the amount of increase.

F. Goals of the State Plan were to increase by 2% the enrollment of both the disadvantaged and handicapped in vocational education during fiscal 1971.

Separate enrollment figures for disadvantaged and handicapped are not available for fiscal 1970. The 1970 enrollments were reported as those with "special needs" which include both the disadvantaged and the handicapped. However, fiscal 1971 enrollments are recorded separately for the disadvantaged and handicapped. The computerized enrollments indicate that the goal of a two percent increase was met in both categories. The increase was so significant, nearly 50% for the combined categories, that it would appear that the goal may have been too limited and that there is a continued need for concentrated efforts by vocational education to meet the needs of the disadvantaged and handicapped.

A factor which contributed to this increase in enrollment was the full time assignment, during fiscal 1971, of a state staff member to the area of special needs in vocational education.

ii.

WHAT WAS THE EFFECTIVENESS OF VOCATIONAL EDUCATION IN SERVING THE PEOPLE AND THEIR NEEDS?

The accountability of all education and particularly, in this case, vocational education, must be measured by considering the many and diverse needs of the people, in comparison with the potential which vocational education has to meet these needs. The Advisory Council has sought to keep these factors in mind in making the following evaluations.

A. Are there valid data available on job opportunities and manpower needs for planning purposes?

Lack of valid data on job opportunities and manpower needs remains a barrier to good planning for vocational education in Montana.

Available information as reported in the State Plan for Vocational Education is inadequate for accurate program planning by either the Office of the Superintendent of Public Instruction or local education agencies. The data is reported for broad categories such as trade and industry, rather than for specific jobs like machinist or auto mechanic. For example, it was projected that in 1971 Montana would need 5,229 more workers in trades and industry. There was no indication whether these workers were to be machinists, auto mechanics or heavy equipment operators. Even the most conscientious planner can do little but guess at which programs should be instituted and which should be changed or eliminated. Valid data is necessary in order to plan adequately for manpower training.

Data from other research reports indicate that the labor supply and demand projection for agriculture as reported in the State Plan is in error. The Plan projects that by 1975, Montana will need 1,162 new workers in agricultural production. The multi-volume Montana Economic Study by the Bureau of Business and Economic Research of the University of Montana (1970) indicates a continued decline in agricultural employment during the next decade. The error in the State Plan may have occurred because no attempt was made to differentiate between short term and long term employment needs. For example, the hay harvest employs many high school and college students for a short period of time. Training for this type of job is uneconomical and unnecessary. Careful attention must be paid to the difference between long and short term employment needs when planning training programs.

For some time, lack of job opportunities in Montana has caused a high outmigration of Montana youth. This makes it imperative that job market information be collected on a national and regional, as well as a state and local basis. Cooperation of all agencies with such information is needed to secure the data.

B. To what extent is there coordination of training opportunities among agencies?

With the proliferation of new training programs available to the people of Montana, it appears that at times these programs compete for students. This competition tends to be particularly among programs directed toward persons with "special needs", i.e., the handicapped, disadvantaged, unemployed, underemployed, etc.

The rapid development of new programs has created a difficult task of coordination. Because there are a great number of people who can benefit from these programs, there is a critical need for the responsible coordination and direction of all vocational, career training in Montana.

We recommend that the State Board of Education utilize information from local vocational education advisory committees and the state office and cooperate with the Montana Manpower Planning Advisory Council in coordinating program planning and development of vocational education programs throughout the state.

C. To what extent is there coordination and articulation among secondary, post-secondary and adult education agencies?

Montana has an unusual administrative organization for vocational education. The State Superintendent of Public Instruction is the Executive Officer for Vocational Education. As an elected official, the Superintendent is an ex-officio member of the State Board of Education and the Board of Regents of the State University System (the Boards have the same membership). This arrangement puts state administration of vocational education in elementary school districts, high school districts, or institutions of higher education under the same board with one executive officer for vocational education. Such an arrangement has great potential for coordinating and strengthening the vocational education delivery system in Montana.

The majority of the vocational education programs are conducted by the

secondary school districts. These school districts offer secondary vocational education and some adult vocational education. The number of students who complete secondary vocational education programs and are qualified for job entry is not nearly as large as the number enrolled. This is due in part to the fact that only one quarter of these students graduate each year. Further, a significantly large portion of the secondary vocational education enrollment is in non-wage-earning home economics.

It appears that in the past there has been little coordination between schools in the planning of programs. For example, in 1970, there were 67 programs in agricultural production available to the secondary student, but only one available at the post-secondary level. Data is not available to justify such an imbalance.

Secondary schools, however, are giving greater consideration to the vocational education needs and desires of youth. Increased opportunities in pre-vocational and vocational education are reflected in the curricula of several schools.

Many schools are providing field trips to the post-secondary vocational education centers. The counselors, teachers and placement officers of many of the post-secondary vocational programs are making personal visits to the secondary schools and are also participating in career night programs sponsored by several high schools.

Adult vocational education is offered on a demand basis, consequently it is closely correlated with the desires of the student population. How accurately the student demand for a course reflects job opportunities in the field is unknown.

Employer requests for specific training programs are few, probably because: 1) Until recently, little post-secondary vocational education was available in the state. 2) Most employers are unaware of the training potential of vocational education. 3) Slow growth of the economy. Demand for adult vocational education might be stimulated by greater publicity concerning the types of programs which could be made available.

Program facilities for adult vocational education are in almost every case those of the secondary or post-secondary school. The three levels of programs, secondary, post-secondary, and adult, usually share the same administrative officer as well. Over-utilization of facilities by one or two levels has in some instances been detrimental to the other program levels. Because of over-crowded facilities, the Council recommends that the State Board take action to relieve such conditions where they presently exist. Program restructuring, time changes, better program coordination, as well as additional facilities, are means by which the problem could be reduced.

There is a need for improved communication between public and private post-secondary vocational schools. Such communication could reduce duplication and increase the efficiency of the vocational education delivery system. For example, it is sometimes more economical to utilize a private post-secondary training program than to institute an additional public program of the same type. The Vocational Education amendments of 1968 specifically state that funds may be spent for "Provision of vocational training through arrangements with private vocational training institu-

tions where such private institutions can make a significant contribution to attaining the objectives of the State Plan, and can provide substantially equivalent training at a lesser cost, or can provide equipment or services not available in public institutions." The State Board should take the leadership in increasing and improving communication with the private vocational schools.

D. To what extent are employer needs being considered in program planning?

Seventy-six of ninety secondary schools reporting indicated they had an advisory committee or committees working with the school on vocational program planning. Although the Council does not have information on the precise make-up of these local committees, logically they should include employers.

We do not know how active these committees are statewide, but in some cases their recommendations have become part of the operational plan for the training program. The Council recommends that all schools have active advisory committees which include employers.

Data reported in the State Plan on employment opportunities and vocational education output, when compared, indicates that vocational education and other manpower programs are unable to meet the projected labor demand. Only from distributive education programs does the supply of trained people exceed the demand.

The Council has reason to question the validity of the data on employment opportunities included in the State Plan. Valid data is necessary to assess accurately the extent to which employer needs are met. We recommend that the State Board encourage a project to compile data on state, regional and national manpower needs. The services of all public and private agencies and organizations with such information should be utilized. The State Employment Service may be the most logical chief sponsor of this project.

E. To what extent are the educational institutions assuring job placement of graduates?

A period of high unemployment makes the task of job placement of graduates much more difficult for the schools. Such an economic situation actually increases the school's responsibility and should not be used as an excuse for not providing sufficient placement services. The services of all available agencies should be utilized in placing graduates.

Evaluation of present procedures for job placement indicates that much more needs to be done in this area by local educational agencies. For example, Montana secondary schools provide considerable assistance to students seeking college entrance. This is commendable: however, we recommend that equal effort be expended to assist students seeking job placement or further vocational education.

Our study of secondary schools indicated that last year only one-third of the high schools in Montana were providing any job placement service. Several of the schools offering placement services indicated that they do so on a limited basis. Even though all post-secondary vocational-technical schools provide a placement service, several of these services are limited and some are informal and loosely organized.

We recommend that the public schools make job placement of students as important a responsibility as their actual education and training.

F. To what extent is vocational education involved in total manpower development programs of the state?

Accurate data on the involvement of vocational education in manpower development programs in Montana will be available when the Enrollment-Exit-Followup study by the Office of the Superintendent of Public Instruction is completely operational.

Presently we have little information on the involvement of secondary vocational education in the manpower picture.

Programs funded and coordinated under the Manpower Development Training Act (MDTA), Work Incentive Program (WIN), Concentrated Employment Program (CEP), etc., are among the many training programs under which post-secondary vocational schools are partly or totally responsible for providing training for selected or eligible candidates.

Manpower development programs are usually established in a community with a post-secondary vocational school. The most notable exception to this rule are the many manpower training programs on the Indian reservations, which have little if any correlation with vocational education programs. Communication and coordination with the extensive vocational training and business development program being conducted on the Rocky Boy Reservation is almost non-existent. Programs are reported to be in operation at other locations but so little information is available that we are not sure of the extent of the training. There is room for improvement: vocational education departments and schools should be more involved in total manpower development.

Governor Anderson has recently created the Montana Manpower Planning Advisory Council, which should have considerable impact on this problem. Vocational education is represented on the Council by the State Superintendent of Public Instruction and the State Director of Vocational Education, as well as two members of the State Advisory Council for Vocational Education by virtue of their positions.

G. To what extent are vocational educational opportunities available to all the people at the secondary, post-secondary and adult levels?

The latest complete data available is for the school year 1969-70.

Five area vocational education centers provide post-secondary vocational training to all Montana residents over the age of 16. Located in the five largest cities of the state, these centers charge the student a maximum fee of $50 a year. Situated in the western two-thirds of the state, the centers are far from the citizens of sparsely populated eastern Montana.

Three community colleges, one four-year state college and an independent high school district also offer post-secondary vocational education. The location of two community colleges in eastern Montana makes some training available in that area. Created, but not yet operational, the Mountain-Plains Regional Educational Center located in Glasgow may provide vocational education opportunity for a limited

number of Montana citizens. Federally funded, this Center is to serve the six-state mountain-plains region, which includes Nebraska, North Dakota, South Dakota, Wyoming, Idaho and Montana. Because of the potential impact of this project on Montana, we recommend to its Board of Directors that they establish an advisory committee to their Center, and further suggest that the Montana Advisory Council for Vocational Education be represented on that committee.

Montana's large geographic area and sparse population combined, substantially increase the cost of making vocational training available to all who need it. In the past three years the state has significantly increased expenditures for vocational education. In 1969-70, $4,487,523 was budgeted by the state for vocational education, compared to $2,840,341 in 1968-69. In 1969-70 the federal government provided $1,514,754, a small increase over the $1,120,652 for 1968-69.

During 1968-69 we trained 18,336 students, and by 1969-70 the enrollment had increased substantially, to 26,758. This increase was limited by three factors:

1. Lack of funds limited the number of instructional programs.

2. Limited facilities prevented the institution of new programs.

3. Lack of publicity for the vocational education programs now available.

The State Advisory Council for Vocational Education recommends: 1) Increased financial support for vocational education. Particularly, we recommend that the federal government be encouraged to increase its support to an amount more nearly equal with that provided by the state. 2) All school districts, and especially those in eastern Montana, should be encouraged to use the optional mill levy for adult vocational education. Use of this levy can help to bring vocational education closer to those people who cannot reach the area centers. 3) Additional publicity, accurate and timely, should be given to vocational education.

M. What indications are there that students feel that vocational programs adequately meet their needs?

In evaluating the vocational education system in Montana this past year, the Advisory Council attempted to contact all students in post-secondary vocational programs in state-supported schools. A member of the evaluation team explained the questionnaire to the students and pointed out that they would be anonymous. No attempt was made to contact secondary school students.

That aspect of the vocational training about which the students were least enthusiastic was the adequacy of classrooms, labs and shops. These received the largest number of poor and very poor ratings.

Instructional materials, background theory provided by the program, and practical application of the training to job requirements were felt to be adequate to excellent by a large majority of the students. Overall, the training program was rated adequate to excellent by more than 21 out of every 23 students.

Teachers were felt to be very capable in their teaching and very helpful in providing advice to the student. Counselors rated excellent to adequate but were not thought as helpful as the teachers.

Half of the students said they received specific aid in preparing a job application or preparing for an interview. Only five out of eleven students felt they had received help from the school in finding a job.

On the other hand, approximately seven out of every ten felt they were helped in learning how to work with other people and how to adjust to job responsibilities. Seven out of every ten also felt they were given specific help to qualify them technically for a job and learn their own abilities and interests. Eight out of every ten students surveyed indicated they were provided specific help in overcoming educational weaknesses which they had upon entry into the program.

The Council recommends that an extensive effort be made by the State Board to see that students are provided improved job placement services, as well as other "individual help" services such as learning to work with other people. It appears that the type of help the students feel they need is not necessarily the type of help the schools think they need. More student involvement may be necessary in the development of student personnel services. Continued training of present staff as well as additional personnel services staff is desirable.

I. What is being done about occupational awareness at the elementary level?

A questionnaire submitted to 107 school districts provided the information that only 27 schools have any organized program of occupational awareness or orientation at the elementary level. Twenty of these twenty-seven schools have enrollments of under 250 and teach a total of 9,947 students. Only one school district with over 1,000 students has an organized program of occupational awareness for its elementary students.

Consultation with state and local educators has provided information that other schools have some vocational orientation in conjunction with the regular curriculum. This orientation appears sporadic, unorganized, and basically dependent on the discretion of the classroom teacher.

The Council recommends a strong and organized effort by elementary schools to make the student aware of vocations which may be open to him. In general, children are unaware of the extensive range of occupations which might interest them. To relate a student's educational program to the world of work in which he will spend most of his life is a goal to which each school should be dedicated.

Funds for vocational education programs below the high school level would be a strong incentive to the schools to provide occupational orientation in the lower grades. We must face the fact that crucially needed vocational education is expensive education and is frequently dropped by schools when funds are "tight."

J. Two special problems

The Advisory Council's evaluation of vocational education for fiscal year 1971 brought to light two problems which exist in a number of the schools offering post-secondary vocational education training.

In a number of cases the Council found that programs of similar instructional content were offered under different titles at different schools. This practice

caused considerable confusion on the part of our research and evaluation teams in their effort to identify similar training programs. It is assumed that such confusion may be experienced by a prospective student seeking information on training programs available to him.

The Council recommends that standard program and course titles be established by the State Board and that these titles be used to refer to all funded programs in the descriptive literature of program offerings.

A second problem noted by the Council was the tendency on the part of some post-secondary vocational schools to advertise programs which they did not actually offer. Such false advertising is unfair to the prospective student and could cause misunderstanding between the student and the school. Neither vocational education nor the student benefits from such a situation.

The Council recommends that the State Board take appropriate action to discourage schools from such misleading advertising.

III.

TO WHAT EXTENT DID PREVIOUS COUNCIL RECOMMENDATIONS RECEIVE DUE CONSIDERATION?

The Montana Advisory Council for Vocational Education submitted, through the State Board of Education at the State Board meeting of September 3, 1970, its First Annual Report to the United States Commissioner of Education and the National Advisory Council on Vocational Education.

Upon receipt of the report, the State Board directed the Secretary of the Board to include the recommendations on the agenda of future meetings for further study. Although the staff of the Office of the Superintendent of Public Instruction has worked on the recommendations, the State Board has not followed through with its plan to give further attention to the recommendations.

A. To whom were recommendations made?

The recommendations of the First Annual Report of the Montana Advisory Council for Vocational Education were made most specifically to the State Board of Education, the Office of the Superintendent of Public Instruction, the National Advisory Council on Vocational Education, the U. S. Office of Education, and the U. S. Congress. Approximately 150 copies of the First Annual Report were distributed to a diverse group of people and agencies. This group included: State Board of Education, Governor of Montana, U. S. Senators and Congressmen from Montana, State Superintendent of Public Instruction, U. S. Commissioner of Education, National Advisory Council on Vocational Education, Regional Office of U. S. Office of Education, other state advisory councils, state legislators, school officials, the general public, and the news media.

B. What actions have been taken, and to what extent have these actions fulfilled the intent of the recommendations?

In September, 1970, the State Advisory Council for Vocational Education re-

viewed with the State Board of Education the First Annual Report by the Council, which contained nine recommendations.

Seven of the nine dealt specifically with the state level operation of vocational education. At the present time, six of the seven recommendations have received some attention from the Office of the Superintendent of Public Instruction. The two remaining recommendations were directed toward the federal level with some degree of success. The following is a brief review of the attention given to each recommendation:

Recommendation #1. "Local in-service training of teachers should be stressed by the State Board of Education...certification of vocational teachers should be carefully studied...by the State Board..."

An increase of in-service training has been provided through state education staff members and the University System. Only Northern Montana College, however, is offering a systematic, in-service, vocational education teacher training program. This program should be expanded. In-service teacher training programs by the state staff have been provided through workshops and institutes on cooperative vocational education, vocational guidance, vocational agriculture, business and office education, distributive education, and consumer and homemaking education. Teacher training by the State office staff should be coordinated with that being conducted by the University system.

The second part of this recommendation deals with the concern that vocational education certification be thoroughly reviewed by a broad-based review group. Presently there is a study of teacher certification being conducted by the staff of the State Superintendent. We urge the staff to utilize the expertise of representative practitioners from the teaching field and the University system, as well as the world of work.

Recommendation #2. "...the Executive Officer for Vocational Education develop strong guidelines providing for vocational education to the disadvantaged and handicapped."

This recommendation is being acted upon at the present time, and a handbook is nearing completion. Training for the classroom teacher having responsibility for teaching the handicapped and disadvantaged in vocational education has, to date, been given little emphasis. We reaffirm our recommendation that emphasis be placed upon this teacher training.

Recommendation #3. "...language in the present law (V.E.A. '68) and rules and regulations for implementation of the law should be clarified..."

The legality of the use of Part B, V.E.A. '68, funds for orientation to vocational education and vocational education below the secondary level is questionable. This part of the Act still needs to be clarified.

Recommendation #4. "...a strong, well-documented local plan for vocational education. We recommend that the requirement of such a local plan be implemented immediately by the State Board...(a guideline be prepared to direct the local education agency in the development of such a plan)."

The Office of the Superintendent of Public Instruction is presently developing a handbook for use by local agencies in formulating local plans for vocational education.

Completion and distribution of this handbook is crucial to adequate planning for the local school. Priority should be given to completion of the handbook and its distribution to the schools by November 1, 1971. A later date will seriously reduce the possibility of strong, well-documented plans for vocational education in fiscal 1973.

Recommendation #5. "...we recommend that...State Board policy statements for vocational education during the past 10 years be reviewed and new and revised policy statements be adopted by the Board and written into a policy handbook for distribution."

A task force of staff from the Office of the State Superintendent of Public Instruction is presently working on the development of a plan of operation for the total vocational education system in Montana, K through adult. This plan, when completed, will be a valuable tool for the use of local schools in the development and operation of their vocational education programs. It is uncertain, however, whether this plan will serve as a policy handbook representing the position of the State Board, or whether it is actually intended to serve such a function. Policy must be developed concerning vocational education in Montana in such matters as financial support of vocational education, duplication of instruction, fragmentation of programs, responsibilities and obligations of the post-secondary Centers, the University system, community colleges, secondary and elementary school districts. The need is critical and demands prompt attention by the policy-making body.

Recommendation #6. "The Council recommends that the Office of the Superintendent of Public Instruction be directed by the State Board to continue the development of the present data gathering system the office has recently inaugurated."

During the past year significant revision of the data gathering system has been made. Simplification of the system is necessary. The state is yet without adequate and valid data for use in planning and evaluation. This system, when operational, has the potential to provide a much needed source of such data. High priority should be given to the complete implementation of this system.

Recommendation #7. "The Council recommends that the National Advisory Council continue its efforts to inform the Congress of the United States of specific legislative needs for vocational education."

Three specific areas of concern were expressed by the Council. They were:

1. The inconsistent availability of federal funds for vocational education.

2. The time lag in the U. S. Office of Education in distribution of rules, regulations and report data following law enactment.

3. The inequities in the present system of allocating funds to states.

During the past year the National Advisory Council has several times presented the case for vocational education to members of the Congress as well as to the Secretary of the Department of Health, Education and Welfare and his staff. Three reports have been compiled and disseminated by the National Council during the past year, which have made suggestions for improvement relating to all of the parts of Recommendation #7. Response has been slow by the policy makers at the national level. To quote the National Council, "The question is being asked: Is anybody listening...?"

Recommendation #8. "Efforts of several agencies involved in vocational education and training be cooperatively coordinated to provide the best and greatest amount of vocational education opportunities for Montana citizens."

According to information available to the Council, some progress has been made in the past year in coordinating the programs of several agencies involved in manpower training. We feel that national legislation in the past year and recent coordination efforts by the Governor's office indicate that this need still exists and is of considerable importance at both state and national levels. We recommend continued development of cooperative coordination among agencies involved in the overall vocational education and training programs in the state.

Recommendation #9. "...The Council recommends that the State Board expand the advertisement and explanation of Montana vocational education opportunities..."

The Office of the Superintendent of Public Instruction during the past year has conducted a number of workshops and information meetings to help make the administrator, counselor and teacher more aware of the need for a sound vocational education program.

Twenty-five counselors were enrolled in an eight-week course to acquaint them with vocational education. Administrators, teachers and counselors were involved in two week-long workshops that provided the basics for developing a cooperative vocational education program. Brochures and catalogs on post-secondary vocational education were published and distributed to students, parents, counselors and teachers. The youth groups of several vocational education service areas--Future Farmers of America, Future Homemakers of America, Distributive Education Clubs of America, Vocational Industrial Clubs of America and Office Education Association--offer an excellent opportunity to spread the word for the cause and the worth of vocational education, particularly at the secondary level.

An increasing number of local school districts are inviting vocational education representatives to appear at their college or career nights to tell students of vocational education opportunities at the post-secondary level.

Business, industry, labor, news media and Chambers of Commerce could be very useful in publicizing the availability and value of vocational education.

C. What factors influenced the success or failure of implementation of the recommendations? What follow-through is being maintained by the Council?

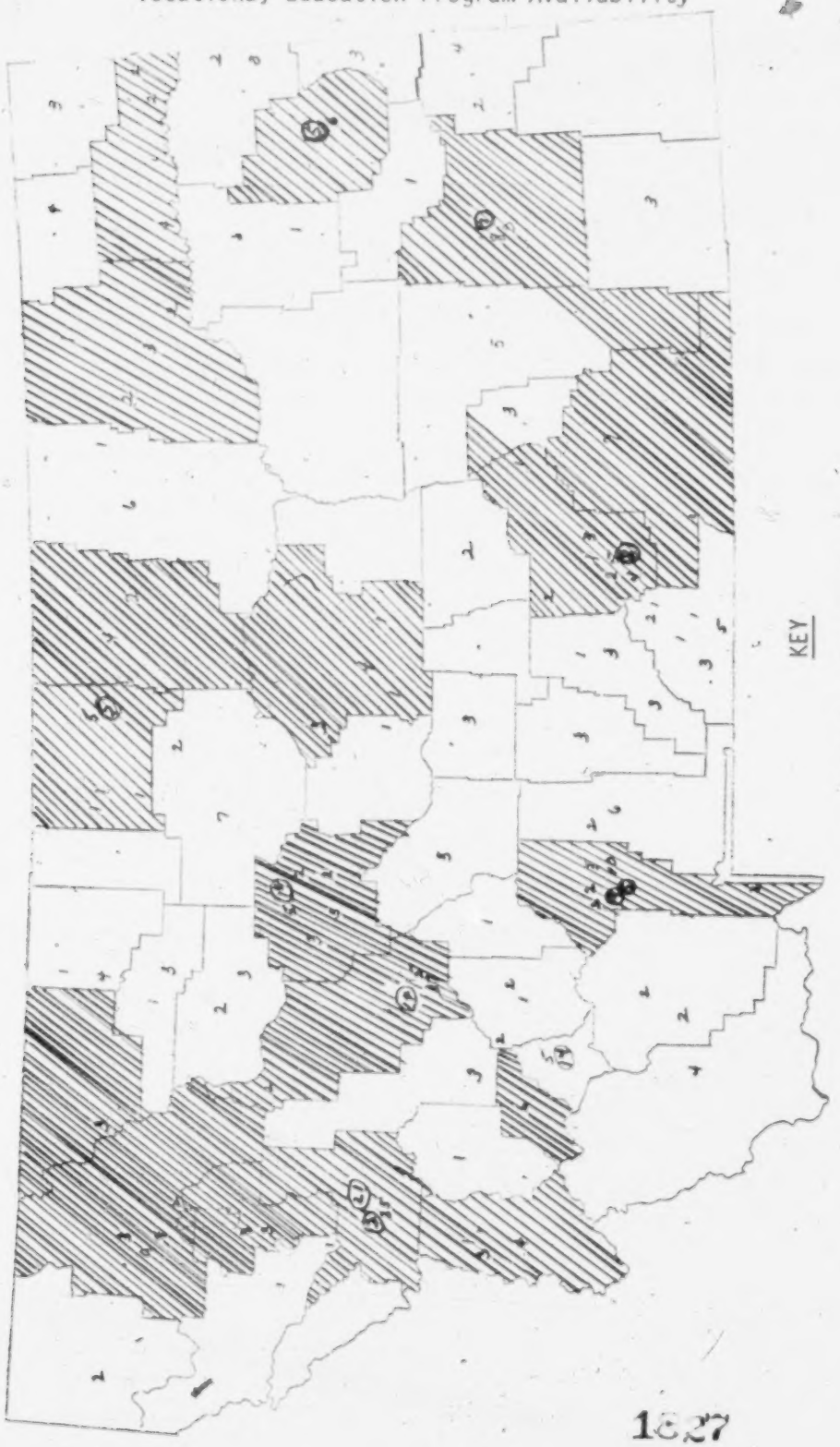
The nine recommendations presented in the First Annual Reporthave been only partially implemented. Of the seven recommendations directed toward the state, all but one have received some attention. Many of the recommendations were extensive and will require more time to implement fully. The one recommendation that has received no attention is #5 (see p. 16). We wish to re-emphasize its importance and encourage the Board to review its policies regarding vocational education.

The remaining two recommendations in last year's Report were directed toward the National Advisory Council and federal legislation. Reference is made to the general subject area of the recommendations by the National Advisory Council in their January and June, 1971, reports to the Secretary of the Department of Health, Education and Welfare. Follow-up by the National Advisory Council will be necessary in order to see if anyone is listening.

Last year's recommendations continue to be important and the Council plans to continue the cooperative review of the progress made toward their implementation. This will be done through frequent contacts with the staff of the Superintendent of Public Instruction and by continued contact with and interim reports to the State Board of Education. Advantage will be taken of regional and national meetings involving state and national advisory councils and the U. S. Office of Education staff to pursue the two recommendations to the federal level. We also plan a continued communication with our Congressional delegation in Washington, D.C., regarding recommendations for vocational education.

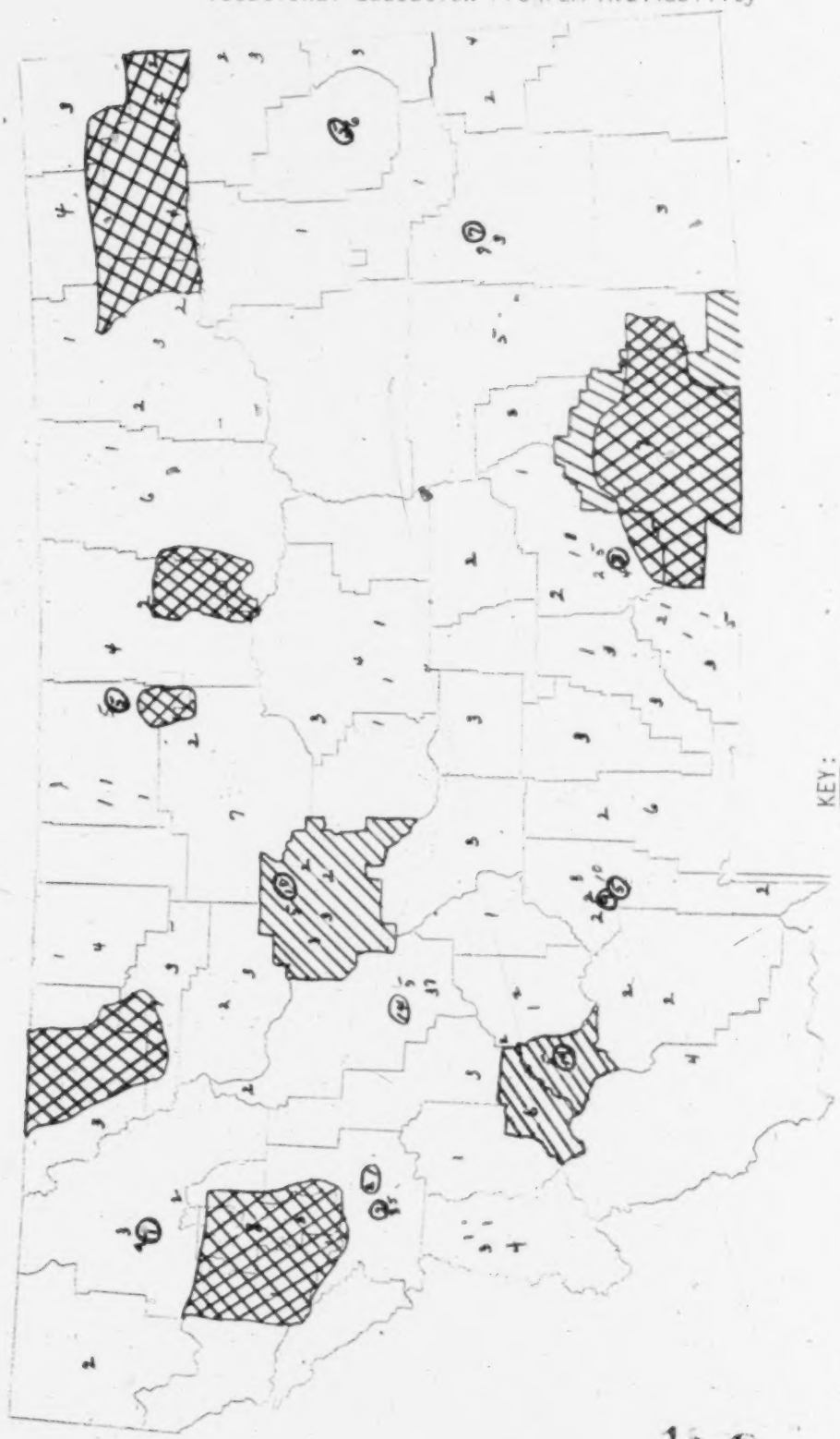
Appendix I

Concentration of Unemployed Youth and
Vocational Education Program Availability



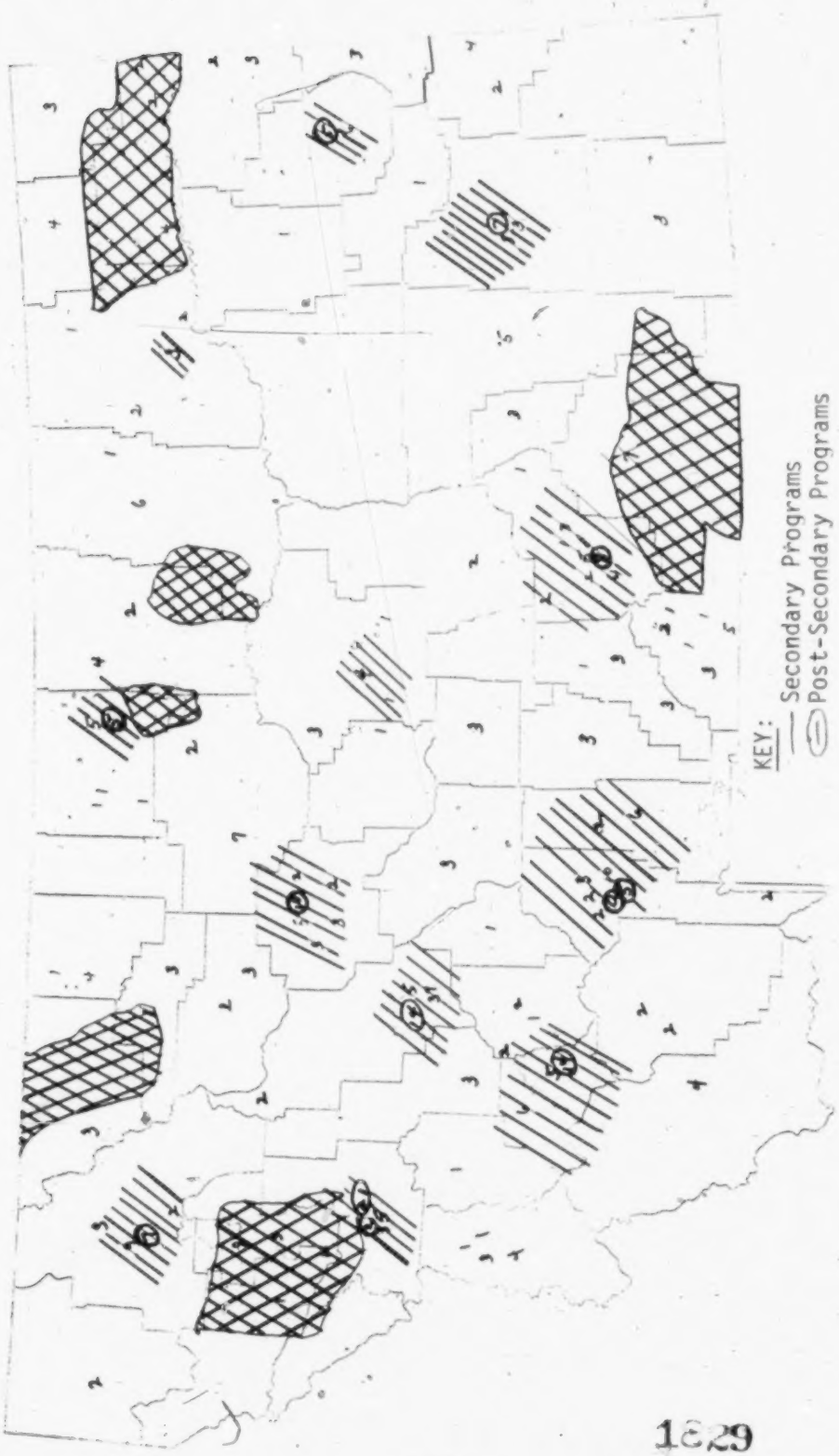
Source: State Plan for Vocational Education, 1971, Part III
S.A.C.V.E. Survey, 1970-71

Appendix 1 (continued)
Concentration of Unemployment and
Vocational Education Program Availability


KEY:
Secondary Programs
Post Secondary Programs
Areas of high concentration of unemployment among Indian population
Areas of high concentration of general unemployment

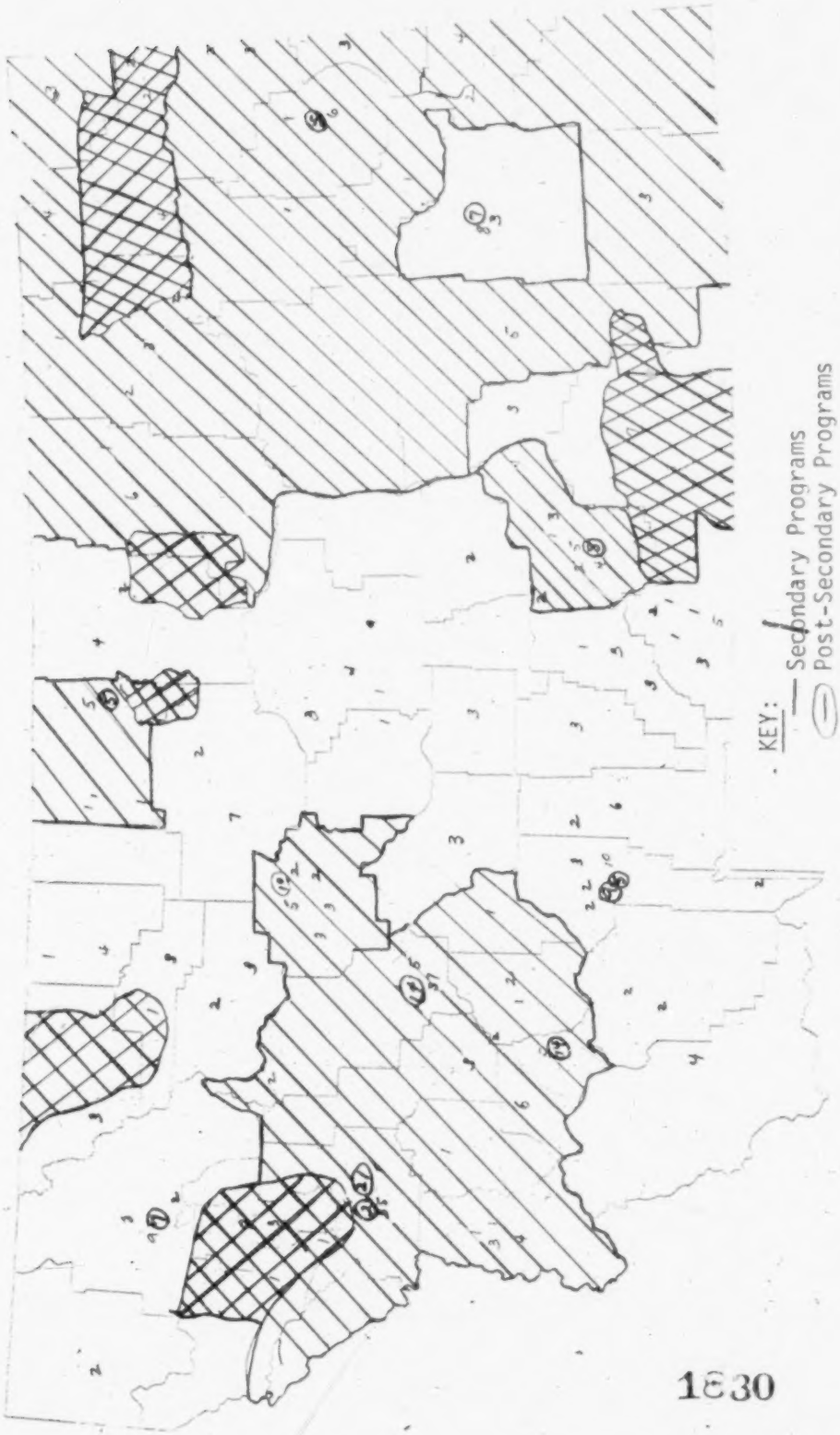
Source: Ibid.

Appendix 1 (continued)
Concentration of School Dropouts and
Vocational Education Program Availability


KEY:
Secondary Programs
Post-Secondary Programs
Concentration of Indian population with high rate of school dropouts
Areas with concentration of dropouts among the general population

Source: Ibid.

Appendix 1 (continued
Designated Community Action Programs and
Vocational Education Program Availability


KEY:
Secondary Programs
Post-Secondary Programs
Designated Community Action Programs for the depressed on Indian reservations
Designated Community Action Programs for the depressed general public

Source: Ibid.

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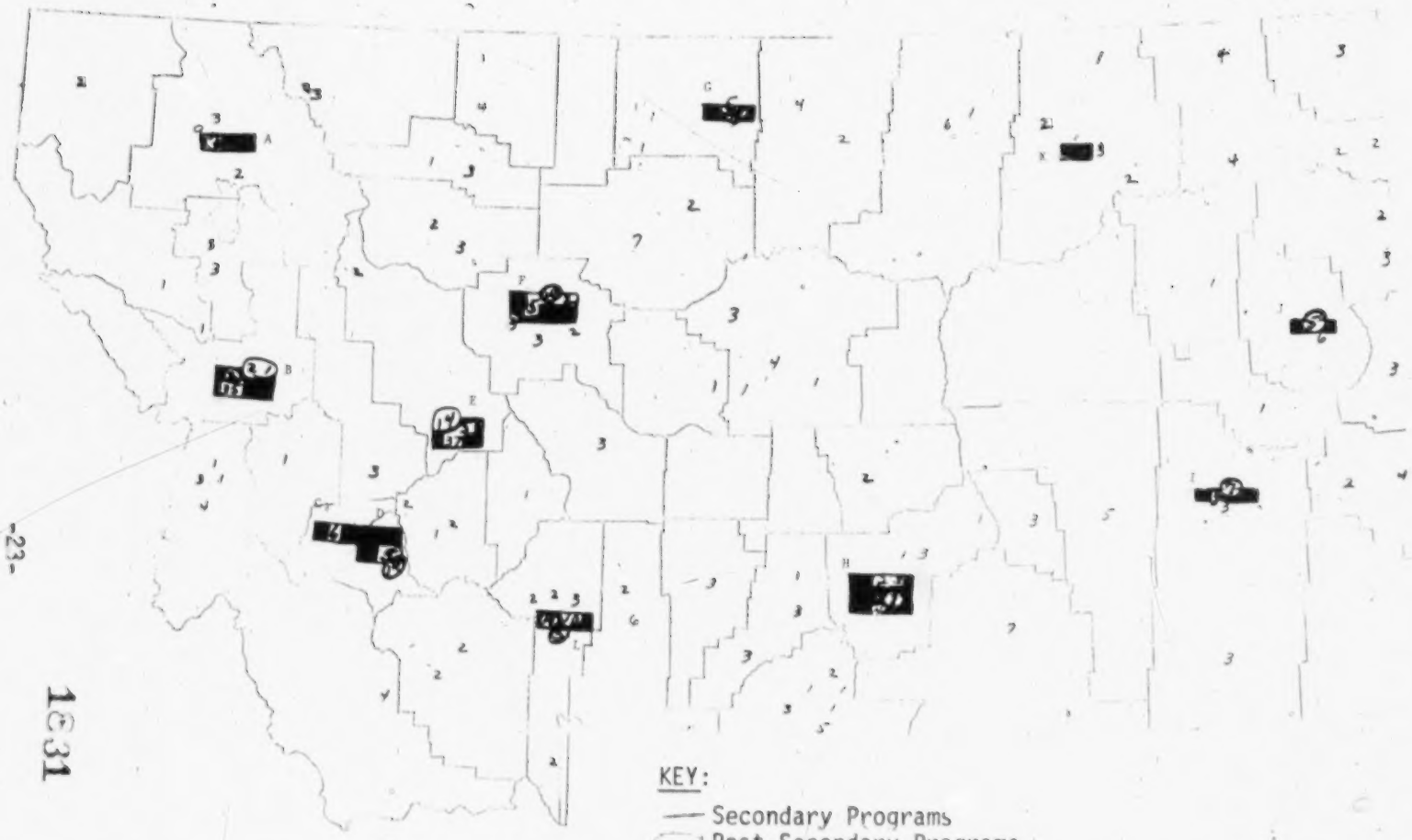
Appendix 1 (continued)
Concentration of State Population and
Vocational Education Program Availability



KEY:

— Secondary Programs
Post-Secondary Programs

Communities having greatest population density:

A. Kalispell	E. Helena	I. Miles City
B. Mi ssoula	F. Great FAlls	J. Glendive
C. Anaconda	G. Havre	K. Glasgow
D. Butte	H. Billings	L. Bozeman

Source: Ibid.

APPENDIX #2

A. Major evaluation activities of the Council during the past year have been:

1. On site visitations of all post-secondary vocational education schools. Evaluation teams were composed of Council members, local school advisory committee members, school board members, and state legislators.

2. A mail survey of all secondary schools offering vocational education. Nearly 90% of the schools responded.

3. Contracts with two graduate students for evaluation studies in specific areas.

4. Evaluation of progress reports of post-secondary vocational education centers.

5. Reviewed extensively the State Plan for Vocational Education and made recommendations on the fiscal 1972 revision.

B. Other major activities of the Council:

1. Testified in favor of state legislation to promote and expand vocational education.

2. Provided data on vocational education as requested by the state legislature.

3. Maintained contact with offices of U. S. senators and representatives regarding vocational education.

4. Conducted evaluation and prepared the Second Annual Report with minimum contracted assistance.

5. Participated in pertinent regional and national meetings regarding vocational education.

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VT 019 322

VT 019 322
MONTANA ADVISORY COUNCIL FOR VOCATIONAL EDUCATION. THIRD ANNUAL EVALUATION REPORT.

MONTANA STATE ADVISORY COUNCIL FOR VOCATIONAL EDUCATION, HELENA.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - DEC72 47P.

DESCRIPTORS - *ANNUAL REPORTS; *ADVISORY COMMITTEES; *VOCATIONAL EDUCATION; DOCUMENTATION; *STATE PROGRAMS
IDENTIFIERS - *MONTANA

ABSTRACT - DIVIDED INTO THREE MAJOR PARTS, THIS REPORT BY THE MONTANA ADVISORY COUNCIL FOR VOCATIONAL EDUCATION SUMMARIZES THE PROCEEDINGS AND ACHIEVEMENTS OF THE GROUP DURING THE 1972 PERIOD. PRESENTED ARE: (1) A SUMMARY OF THE ACTIVITIES IN WHICH THE COMMITTEE ENGAGED, (2) RESULTING RECOMMENDATIONS FORMULATED, AND (3) EVALUATIVE ASSESSMENTS OF PROGRAMS AS TO THEIR GOALS, EFFECTIVENESS, AND APPROPRIATENESS TO THE POPULATION FOR WHICH THEY WERE DESIGNED. TABLES AND MORE DETAILED INFORMATION ON STATE COUNCIL MEMBERSHIP, STATE BOARD OF EDUCATION MEMBERSHIP, RESOLUTIONS SUBMITTED TO THE BOARD IN 1972, AND SECONDARY, POST-SECONDARY, AND ADULT PUBLIC VOCATIONAL EDUCATION ENROLLMENTS ARE APPENDED. (SN)

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EDUCATION & WELFARE
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THIRD ANNUAL EVALUATION REPORT

MONTANA ADVISORY COUNCIL FOR VOCATIONAL EDUCATION

HELENA, MONTANA

December 1972

VT 019022

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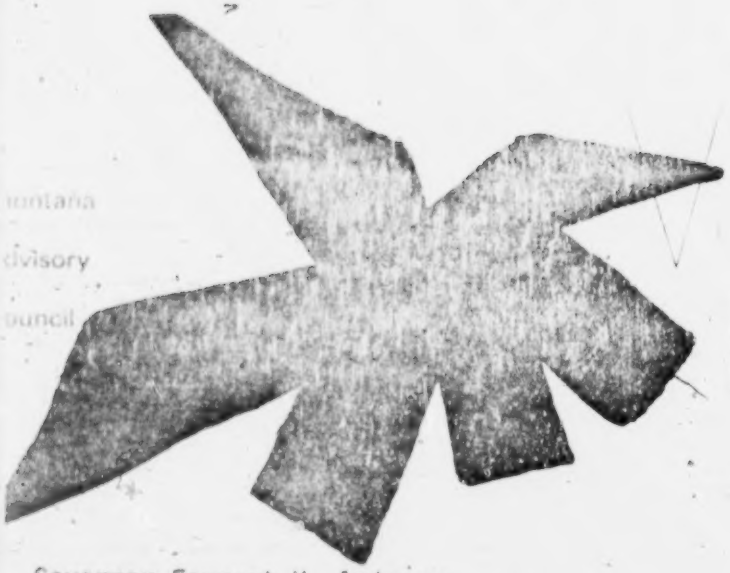

montana
advisory
council

VOCATIONAL
EDUCATION

December 11, 1972

Governor Forrest H. Anderson
President, State Board of Education
State Capitol
Helena, Montana 59601

Dear Governor Anderson:

The Advisory Council for Vocational Education is pleased to transmit its Third Annual Report on Vocational Education. This report, made in accordance with P.L. 90-576, is forwarded to the State Board of Education for its use and for transmittal to the United States Commissioner of Education and the National Advisory Council on Vocational Education. As you know, the law provides that when forwarded, this report may be accompanied by any comments that the State Board thinks are appropriate.

We have made every effort to be objective in our evaluation and believe that implementation of the recommendations will lead to better vocational education for the people of Montana.

Respectfully,

Linda Skaar

(Mrs.) Linda Skaar
Chairman

7 state arsenal building • helena, montana 59601 • p.o. box 1157 • phone 449-2013

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wyola

INTRODUCTION

"It is virtually an article of faith in modern industrial nations that there is a clear cause and effect relationship between education and the ability to earn a decent living. And there are innumerable statistics to support this contention. College graduates make more money than high school graduates, who in turn have higher incomes than those who dropped out in the tenth or eleventh grade, and so on down the line. But far too many people who should know better equate earning power solely with academic education. They are like the lawyer who noted with suprise that his legal fees weren't as high as the plumbing bill he had just been handed. 'I know,' said the plumber, 'that's why I gave up law."

"Despite the explosion in higher education over the past two decades or so, the United States Commissioner of Education estimates that only two of ten present high school students will receive baccalaureate degrees. For many of those who don't, vocational education may provide the most direct route to good jobs in the trades and crafts and in technical fields. How well is today's vocational education system serving these young people?" *

The Montana Advisory Council for Vocational Education has attempted to provide at least part of the answer to this question in the following report. The analysis and suggestions offered here are to assist decision makers in the difficult but worthy task of planning for vocational education.

---

* Ellis Rottman, Editor, Manpower, vol. 4, no. 11, November 1972

SUMMARY OF ACTIVITIES

To fulfill the responsibilities of the Advisory Council for Vocational Education several activities were conducted and participated in by the Council during the past year. The following played a particular role in assisting the Council to compile the report.

1. Conducted sample survey of secondary and post-secondary students and teachers, principals, and directors.

2. Reviewed legislative needs relating to vocational education and submitted five resolutions to the State Board during 1972 on this topic.

3. Cooperatively developed with the Office of the Superintendent of Public Instruction a public information project on vocational education.

4. Contributed information to members of the constitutional convention.

5. Met with several individuals of the lay public (students, parents, school board members, business men, educators) discussing vocational education.

6. Made formal presentations on vocational education to several different groups.

7. Met several times jointly with the Office of the Superintendent of Public Instruction and local vocational education administrators regarding legislation, funding, coordination, communication, and other topics of mutual concern.

8. Conducted three public meetings in different areas of the state on vocational education. The information gained from these meetings was used in the development of this report.

9. Participated in meetings of all post-secondary education administrators to promote cooperative planning and administration of post-secondary education.

10. Invited special interest groups to make presentation to the Council on their view of vocational education needs.

11. Reviewed reports on vocational education prepared by the Office of the Superintendent of Public Instruction.

12. Studied research reports and statistical data from sources such

as; Employment Security Division, Planning and Economic Development Division, Vocational Rehabilitation, Agriculture Education Department at Montana State University, National Advisory Council on Vocational Education, United States Office of Education, United States Department of Labor, United States Congress, Montana Legislature, Montana Economic Study, Governor's Manpower Planning and Development Advisory Council, Bureau of Business and Economic Research at University of Montana, Montana State Plan for the Administration of Vocational Education, and several reports from other agencies both in and outside the State of Montana.

13. Council staff met regularly with the director and staff of the Vocational and Occupational Component of the Office of State Superintendent of Public Instruction discussing activities, ideas and concerns of each group relative to vocational education.

RECOMMENDATIONS

The Montana Advisory Council Recommends that:

I. The Office of the Superintendent of Public Instruction and the Employment Security Division cooperate in gathering regional employment data. Vocational education planning should be based on both state and regional data.

II. The individual training institutions assume the responsibility for informing entering students of the employment possibilities (in and out-of-the state), potential salaries, full descriptions of the training provided and related jobs which may be available to them.

III. The disadvantaged receive a high priority for vocational training whether our judgments are made on a purely humanitarian basis or a coldly economic one. More of the disadvantaged people should be helped by vocational training than are currently being served in Montana.

IV. As soon as program exit figures are available, the Office of the Superintendent of Public Instruction undertake a manpower correlation study similar to that recently completed in the state of Oregon. This study is an effort to analyze the extent to which educational programs in that state are compatible with manpower requirements. Such a manpower study for Montana should be based on the regional labor market as well as the state market.

V. Continued and intensified efforts be made to increase cooperation, coordination and articulation of educational efforts among agencies as well as individuals involved in providing for the vocational needs of people.

VI. The Office of Superintendent of Public Instruction and the Employment Security Division cooperatively develop a system whereby job placement counselors are specifically assigned and strategically located and charged with the responsibility for providing job placement assistance for students.

VII. The State Board study the possibility of providing added monetary incentives to the local districts to encourage them to provide more adult vocational education.

VIII. The State Board of Education work with all public post-secondary institutions on problem of acceptance of those proficiencies already possessed by a student, thus eliminating unnecessary course reptetition.

The Council would also like to reemphasize the recommendation parts of five resolutions submitted to the State Board in September of 1972.

1. "We recommend the State Board of Education, as the highest policy making board for education in Montana, accept the concept of Career Education and reflect such acceptance in their biennium budget in support of education in Montana."

2. "The Council recommends that the State Board of Education give strong budget and administrative support to post-secondary vocational education."

3. "The Council recommends that the State Board of Education submit to the legislature an appropriation request reflecting a significant increase of state funds for vocational education."

4. "We recommend the State Board of Education propose and support legislative action which would eliminate the present dilemma regarding the leasing, purchasing, or construction of adequate post-secondary vocational education facilities and provide financial means to meet the facility needs of present and future post-secondary vocational education as expressed in Article X of the newly adopted constitution of Montana."

5. "We recommend the State Board of Education promote a thorough review of the legislative status of vocational education and request the assistance of all available sources to conduct this review and prepare proposed legislation recommended by the review."

EVALUATION GOAL I

HOW APPROPRIATE WERE THE STATE'S GOALS AND PRIORITIES AS SET FORTH IN THE STATE PLAN?

Were the Goals and Priorities Suitable in Terms of Student Needs and Employment Opportunities?

The broad goals found in the Fiscal Year 1972 State Plan are generally those required by the Vocational Amendments of 1968, and hence necessary in order to receive federal funds in this category. Although these are worthy goals and their inclusion is understandable, the plan does not appear to contain additional goals based on the unique problems and needs of Montana students.

Over the past two decades the economy in Montana has not expanded fast enough to supply jobs for persons of labor market age. This has forced a large out-migration, particularly of those persons aged 18 to 24. Such a situation makes effective planning for vocational education in Montana very difficult. In spite of the fact that we know many of our vocational students will have to find employment out of state, to our knowledge no information on the regional job market is gathered for use in vocational education planning.

The unemployment rate in Montana is usually 1 to 2% above the national figure and currently presents a particularly bleak picture. The last figures reported by the Employment Security Division placed Montana unemployment at 6.8%, and the report predicted that unemployment would rise to over 10% by February of 1973. Such a situation makes it particularly important that students entering vocational education training in Montana be informed of the job possibilities in their chosen area of training both in Montana and in the western region of the country.

The Montana Advisory Council for Vocational Education recommends that the Office of the Superintendent of Public Instruction and the Employment Security Division cooperate in gathering regional employment data. Vocational Education planning should be based on both state and regional data. Also, it is recommended that all institutions assume the responsibility for informing the students of the employment possibilities (in and out-of-state), potential salaries, full descriptions of the training provided and related jobs which they might be able to fill with that particular training.

Were the Goals and Procedures Sufficiently Comprehensive in Terms of Specific Population Groups such as the Disadvantaged and the Handicapped?

The fiscal year 1972 State Plan projected that the enrollment of disadvantaged students in vocational education would increase from 6% in 1970 to 9.4% in 1972. This goal was exceeded slightly (9.6%) but only 4754 disadvantaged students are enrolled in all vocational education programs and not all of these are receiving special services to assist them in their education. Table one shows the comparisons.

Table 1

The Disadvantaged

	1970 Enrollments	1972 Projections	1972 Actual
Percent disadvantaged population enrolled in vocational education	6.0 %	9.4%	9.6% (4754 students)
Number disadvantaged enrolled in cooperative programs	30	75	30
Total number instructional programs	42	55	35*
Total number disadvantaged enrolled in vocational education work study	70	140	178

*Program emphasis changed; an attempt is being made to integrate the disadvantaged into the regular program and give them special help rather than segregating them into special programs.

Governmental agencies using different criteria for identifying the disadvantaged show various totals, but whether there be 27,000 disadvantaged in Montana or 49,000, the Annual Manpower Report Fiscal Year 1973 would apply:

Barriers to Employment of the Disadvantaged

Past experience indicates that disadvantaged individuals don't have as much trouble adjusting to the competitive labor market as they do becoming part of it. The most common factors hindering these persons from entering the labor market are as follows:

A. Lack of Education and/or Skills . . .
B. Lack of Training or Experience . . .
C. Social Difficulties-Employers are understandably hesitant about hiring persons with police records and placement of these persons, even those who are qualified, is at best, difficult. Other handicaps, physical or mental illness, lack of transportation, to name a few, sometimes restrict a person from obtaining employment.
D. Family and/or Child Care Responsibilities . . .[1]

About half of the handicapped enrolled in vocational education are receiving special services to assist them in succeeding in vocational education, but only 4% of the handicapped in the state are enrolled in vocational education.

Were the Goals and Priorities Related Appropriately to Manpower Development in the State?

A judgment on this question is difficult to make, because reliable data are not available to indicate how accurately the output of the vocational education system matches with employment needs. Figures available, however, do give reason to question how good a match there actually is.

Three sets of numbers are presented in Table 2: projected employment needs (for both expansion and replacement) for eight job categories for the years 1972 and 1976; the projected 1972 "output" (those trained for employment) in these fields; and finally the enrollment in public vocational training schools in the same categories in 1972.

It must be recognized of course that enrollments will be subject to attrition from various causes, and possibly at different rates in different fields. Invariably, the final output will be lower than enrollment, and the number choosing to enter the vocation for which they were trained, is usually even smaller. (See page 20.) But what is significant about the three sets of numbers in this table is that not only do they not agree, but there seems to be no detectable similarity in the size and direction of the differences; and it is impossible to tell whether attrition was taken into account.

At one extreme, for example, are technical occupations, where 1972 projected output (Fiscal 1972 State Plan) is 40% greater than projected employment needs. But enrollment in courses leading to these occupations are six times the 1972 needs, and five times the projected 1976 needs. At the other extreme are Home Economics wage earning occupations. The number of trained and available graduates projected by the State Plan would satisfy a little over one third of

[1]State of Montana Annual Manpower Planning Report, FY 1973, pages 26-27.

Table 2

Comparison of Employment Needs, Vocational Education Enrollments, and Outputs[1]

Type of Training	Projected Employment Needs[7]		Projected Labor Output 1972 [8]		Enrollment 1972 Vocational Education [9]				Percent of 1972 Projected Employment Needs-1972 Enrollment would Supply[10]				
	1972	1976	Voc.Ed.	Other	Post-Sec.	H.S.	Adult	Total	Post-Sec.	H.S.	Adult	Total	P.S. & Adult
Agriculture: Production	670	550	579	21	92	1967	97	2156	13.7%	293%	14.4%	321.7%	28.2%
Supplies & Services	200	250	78	0	205	927	401	1533	102.5	463.5	200.5	766.5	303
Distribution[2]	824	950	807	0	140	767	760	1667	16.9	93	92	202	109
Health Occupations	916	1140	511	134	510	0	85	595	55.6	0	9.2	64.9	64.9
Home Economics[3]	742	850	278	41	43	125	0	168	5.7	16.8	0	22.6	5.7
Office [4]	2122	2500	647	447	1420	3300	3150	7870	66	155.5	148.5	370	215
Technical[5]	216	250	306	68	485	268	550	1303	224	124	256.6	603	479
Trades and Industry[6]	1790	1850	1687	120	1230	5700	3120	10050	68.7	318	174	561	243

(1) See appendix D, p. 44 for graphic comparison
(2) Enrollment in 1972 up 12% from 1971
(3) Wage-earning occupations only
(4) Enrollment 1972 up 47% from 1971
(5) Enrollment 1972 up 100% from 1971
(6) Enrollment 1972 up 52% from 1971
(7) Includes expansion and replacement needs
(8) Fiscal Year 1972 State Plan
(9) Fiscal Year 1972 Statistical and Descriptive Reports of Vocational Education
(10) Assuming all students available for employment

projected demand; but total enrollment in Home Economics wage earning vocational education this year would satisfy less than a quarter of the 1972 needs, and less than one-fifth of the 1976 needs. Admittedly, students cannot be forced into training they do not want to take, nor should they be denied courses merely on the grounds that job-hunting in that field may be difficult. But nevertheless, the above comparison gives rise to a question as to how much of the planning and counselling for vocational training is actually done with an eye on the labor market. (See appendix D, p. 43.)

It is clear that forthcoming data from the Entry-Exit follow-up system are needed. Availability of output figures to match the information now available on students entering vocational programs will make it possible to compare these with projections made in the state plan and provide data for a needed manpower correlation study to analyze the extent to which educational programs in the state are compatible with state and regional manpower needs.

To What Extent Were the State Goals Met During Fiscal Year 1972 and To What Extent Does This Represent an Improvement over Last Year?

In addition to the objectives shown in Table 2 the State Plan sets forth many objectives not related to specific occupational areas. These are found in tables 3 through 9.

Table 3

Vocational Education Objectives in the Secondary School

	1970 Actual	1972 Projection	1972 Actual
Percent of secondary vocational students entering post-secondary vocational education programs	15%	19%	23%
Total number of instructional programs	332	345	443
Percent of students available for work, placed in jobs following training	30%	36%	28%
Percent of students completing program with marketable skills	42%	43% (3500)	41% (4472)
Vocational student-guidance counselor ratio	1 to 400	1 to 300	1 to 400

In 1972 more high school students were enrolled in more programs in vocational education than in 1970. However, as noted in Table 3, a smaller percent of those who completed training are being employed. This may be because we are over-training in some occupational areas (see Table 2) or it may reflect the depressed job market or still other unknown factors.

Table 4

Vocational Education Objectives: Post-Secondary

	1970 Actual	1972 Projection	1972 Actual
Percent of population age 15-24 enrolled in post-secondary vocational education	1%	2% (3754)	3% (4125)
Percentage of post-secondary (2 yr.) students enrolled in vocational education	40%	66%	50%
Total number of instructional programs	76	84	122
Percentage of students available for work placed in jobs following training	92%	100%	93%*
Number of instructional programs for emerging occupations	0	2	1
Vocational student-guidance counselor ratio	1 to 325	1 to 300	1 to 255

* We do not know how well the jobs were related to training.

At the post-secondary level, improvement is shown over the 1970 figures. In three categories out of five, the actual situation fell short of the objectives, but limited funds appear to be responsible for the difficulty in meeting at least two of the three unmet goals. Programs for emerging occupations need greater consideration. They may well replace some presently supported programs.

Table 5

Vocational Education Objectives: Adult

	1970 Actual	1972 Projection	1972 Actual
Percentage of adult population enrolled in adult vocational education	1.5%	3.6%	5%
Total number of instructional programs	95	105	69
New instructional programs	4	10	19

More adults were enrolled in adult vocational education than predicted. A total of 8,729 adults (26% of the total vocational education enrollment) were enrolled in adult vocational education programs. The course offerings appear to be more flexible than those at other levels of vocational education. If numbers of adult programs had not been reduced since 1970, still higher enrollments might have resulted.

Table 6

Exemplary Project Objectives

	1970 Actual	1972 Projection	1972 Actual
Number of projects	5	5	8
Number of students served	709	900	1587
Number of non-profit private school students participating	0	35	0*

* There are no non-profit private schools in the areas where exemplary programs were located.

In 1972, 75% more students were served by exemplary projects than was projected. In spite of the projection no non-profit private school children participated in these exemplary projects because none were in the communities conducting exemplary projects.

Table 7

Consumer and Homemaking Objectives

	1970 Actual	1972 Projection	1972 Actual
Number of programs serving youth in economically depressed areas	25	30	60
Number of programs serving adults in economically depressed areas	4	8	8
Number of programs serving youth emphasizing consumer education	92	110	116
Number of programs serving adults emphasizing consumer education	4	8	9 (564 students)

It is encouraging to note that 60 out of 87 vocational consumer and homemaking programs are located in economically depressed areas. This is double the number of programs predicted for 1972 and shows substantial progress in this area.

Table 8

Objectives in Cooperative Education

	1970 Actual	1972 Projection	1972 Actual
Number of programs	17	12	34
Number of programs in secondary schools	15	9	27
Number of post-secondary schools offering programs	2	3	7
Number of employers participating	95	160	210 (estimate)

A significant increase in the number of programs was achieved, in spite of the fact that because more school districts offered cooperative programs this year, their individual share of the available funds was lower.

It is encouraging to note that the number of cooperative vocational education programs has doubled in the past two years. Cooperative vocational education is an educational method by which students receive on-the-job training in addition to related classroom instruction. It can be particularly effective in bringing vocational education opportunities to students in small high schools. Cooperative education should receive continued encouragement both from local schools and the Office of the Superintendent of Public Instruction.

Table 9

Work-Study Objectives

	1970 Actual	1972 Projection	1972 Actual
Number of secondary schools offering programs	14	14	19
Number of post-secondary schools offering programs	6	8	2*

* Funds for work-study appropriated under Vocational Education Amendments of 1968 have been used mostly in the secondary schools because students at the post-secondary level are eligible for college work-study funds.

A number of vocational education research projects were planned to start in fiscal year 1972 according to the FY 1972 State Plan. Among these were:

1. Survey of employment opportunities

A survey of Agri-Production Manpower was completed in fiscal year 1972. A second phase, a survey of Agri-Business Manpower was completed too late to be included in this report. "The results of this survey will be used to upgrade existing secondary, post-secondary, and adult vocational agriculture curriculums, in order that the curriculums meet the needs of the agriculture industry and that training be given students in areas where there is a demand for employees."[1] These studies are perhaps critical because agricultural employment has declined steadily for a number of years.[2] If it is predicted that decreasing employment opportunities in agricultural production are to continue, but those in agriculture related business are to remain the same or increase, then vocational agriculture courses may well require re-direction.

2. Survey of curriculum based on job analysis

The survey of curriculum based on job analysis is just beginning. A study of employment opportunities has been completed in the agriculture area. Similar surveys are needed in the other vocational education service areas before a complete curriculum survey can be accomplished.

[1] Descriptive Report of Program Activities for Vocational Education Fiscal Year 1972, page 19. Office of Superintendent of Public Instruction, Helena, Montana.

[2] Annual Manpower Planning Report, page 20, Department of Labor and Industry, Helena, Montana, 1972.

3. Identification of handicapped, disadvantaged, and unemployed youth

The entry-exit system is supplying information on handicapped, disadvantaged, and unemployed youth who have entered vocational education programs. Materials have been developed which can be used by administrators to identify the disadvantaged and handicapped in the general school population. It would be useful if a method could be devised to identify unemployed youth who have never been enrolled in vocational education programs.

4. Survey of secondary education dropouts

A questionnaire on dropouts was mailed to 200 junior and senior high schools in Montana after the close of school in 1972. Twenty-two out of 27 junior high schools responded and 128 out of 163 high schools responded. The 150 schools that responded reported the following figures on those students who enrolled for school during the year.

Grade 9	257	dropouts
Grade 10	514	"
Grade 11	511	"
Grade 12	380	"
	1662	dropouts

These figures do not reflect those students who failed to enter school in the fall because they had dropped out over the summer. This situation coupled with the lack of response of fifty schools limits the usefulness of the data. The Annual Manpower Report prepared by the State Employment Security Division, by comparison, estimates nearly three times (4,448) the above total number of dropouts.

5. Needs for adult and continuing education

Local teachers of adult education were surveyed for their opinions of the needs in adult education. As a result of this survey, a change in the approval procedure for new courses has been made. Beginning with the school year 1973, instead of having to submit courses for approval by the Office of State Public Instruction before the beginning of the school year, schools may delay submission until three weeks before the course is to start.

6. Evaluation of consumer and homemaking courses

The continuing evaluation of consumer and homemaking courses has resulted in more emphasis on wage earning home economics courses, more courses aimed at boys and more programs sensitive to the needs of the Indians.

7. Survey of programs of five post-secondary vocational technical centers

From the survey it became apparent that there was a need for closer cooperation between the five centers. The center directors, the superintendent of their school districts, staff from the Office of the Superintendent of Public Instruction and representatives of the Advisory Council now meet regularly. This committee will review all requests for new programs before formal request for approval is made to the State Board of Education. Program needs in relation to the whole system will be reviewed.

8. Develop plan for occupational and vocational education K-14

Instead of working on a plan for occupational and vocational education K-14, the state office, with the cooperation of classroom teachers and others, has been working on a guide for implementation of career education. This guide should be completed during the summer of 1973. Occupational and vocational education K-14 will be an integral part of career education.

EVALUATION GOAL II

WHAT WAS THE EFFECTIVENESS WITH WHICH PEOPLE AND THEIR NEEDS ARE SERVED?

Is There Valid Data Available on Job Opportunities and Manpower Needs for Planning Purposes?

Although data are still very sketchy in the area of job opportunities and manpower needs, the situation has been improved. A five year projection by the employment service, and other manpower surveys have been available this past year. Other surveys are presently being conducted which will be of further assistance (Agriculture Education Department, Montana State University Agriculture Manpower Study, Bureau of Economic Administration, Annual County Employment Estimate, and State Wide Employment Estimate). A problem that continues to plague the planner as well as the researcher is the different systems of data gathering and accounting which are used by different agencies. A standardized system is sorely needed to increase the usefulness of the data for program planning purposes.

An emerging source of reasonably reliable data for manpower needs planning is being accumulated in the Division of Planning and Economic Development by its Information Systems Bureau. This Regional Economic Information System is storing county level data from many sources such as The Employment Security Division, Social Security Administration, and the Internal Revenue Service and can tabulate, analyze, and printout the data at a nominal cost. (See discussion under Goal I, question three.)

To What Extent is There Coordination and Articulation Among Schools and Agencies Relating to Occupational Education at All Age Levels?

It is not easy, given the array of programs shown in chart 1, (page 36) and table 11, (page 35) with overlapping coverage and sources of funds, to achieve anything like ideal coordination and articulation between programs. Administering programs with three sources of funds, for example, invariably means three sets of guidelines, three reports, and perhaps three grant applications followed by three financial audits and three program evaluations.

There is considerable evidence, however, of efforts at coordination and articulation by both secondary and post-secondary level schools in administering vocational education and training. At least four of the federally funded programs listed in table 10, and even privately funded ones like apprenticeship training, make some use of other agency facilities and staffs, rather than duplicating efforts and facilities. Post-secondary guidance and placement counselors from the five centers and the three community colleges are visiting high schools. In cooperation with the Superintendent of Public Instruction they are participating in counselor orientation sessions conducted throughout the state, to acquaint them with post-secondary vocational education opportunities available to those who graduate from or leave high school.

The State Superintendent's Office has widely distributed a brochure describing the post-secondary vocational education opportunities available in Montana. A directory supplementary to the brochure gives detailed information on all post-secondary vocational programs in the state.

Nevertheless, our visit to schools in the state system described in Goal IV revealed there is still much to be done to improve communications. Although 80% of secondary students indicated the information received from counselors was adequate or excellent, a majority of the same sample of students seemed not to be aware of post-secondary vocational training available to them. Even in communities where post-secondary vocational education was offered, we found a surprising number of high school students generally unaware that such opportunities existed.

Chart 1 (page 36) shows the bewildering variety of involvement by many agencies. In spite of efforts at coordination, it is not hard to find instances of little articulation or cooperation between programs of different agencies. In some cases agencies are completely unaware that other programs exist. It should be pointed out, too, that chart 1, and table 11 do not exhaust the list of existing programs, and that there may be others of which we have no knowledge. The need for continued effort to reduce the lack of coordination and articulation is evident.

Another kind of evidence of need for coordination is that although a provision is apparently available for students to "challenge" courses on subjects in which they may already be proficient, we found few instances where this is actually being done. It is imperative that more of this type of articulation be developed among educational institutions. The State Board of Education might well take the lead now in establishing a system for acceptance of proficiency already possessed by a student, and not require him to repeat training just to make his record acceptable to a particular institution.

The sample survey indicated that generally the local advisory committee is organized and does provide to the local school valuable advice which is used in program development. An example of increased emphasis in this area is the 60% increase this year in secondary home economics advisory committees. Some teachers have indicated that the committee is the real catalyst for the success of the program. However, a few (14) teachers who were interviewed expressed a concern that there was inadequate provision for community and industry input into the goals of the program. Secondary school advisory committees seem to be less effective than those at the post-secondary level.

A project designed to provide more information to students, parents, counselors, teachers, administrators, and employers is now underway. This information, to be provided through television and radio spot advertisements will help bridge the information gap between vocational education and the public. We look forward to the successful "airing" of this project in early 1973.

To What Extent Are Employer Needs Considered in Program Planning?

Through the use of a statewide survey of job demands the Employment Security Division has provided an estimated projection of manpower needs through 1975. This projection is the best information available for planning on a statewide basis, but it appears that by next year additional information should be available on job demands in Montana, and possibly even at the county level. (See page 17, Goal II.) Employment projections are still needed from the regional and national levels for planning purposes.

Several of the schools contacted by the Council have indicated they are working closely with employers, through advisory committees, to gain a perspective on local manpower needs, and are developing curricula with this information in mind.

The Council's opportunity to survey employers this year has been limited but it appears that many employers are still unaware of the curricula at the post-secondary vocational education institutions around the state. According to the Montana Manpower Planning Report occupational areas with shortages of qualified workers are timber fallers, log equipment operators, cooks, waitresses, maids, power linemen, welders, hardrock miners, mechanics, and nurse aides. It would appear that at least some of these occupations would be closely related to seasonal operations and may be of only temporary duration. On the other hand some jobs appear to be of a permanent nature and may deserve additional consideration in program planning for vocational ed-

ucation. End of year enrollment reports compared with the projections listed in part two, table one of the Fiscal Year 1972 State Plan for Vocational Education indicate considerable discrepancy in some service areas between the projected labor demand and enrollment. It is difficult to estimate the number of people who must be trained in order to fill a specific number of jobs. After completing training students may not be available for employment in their area of training for a number of reasons: (1) They may seek additional schooling, (2) They may seek other types of employment, (3) They may join the military, (4) Women may marry and not be available for employment.

Since the labor force participation among graduates is less than 100% it is desirable to have the number of people trained exceed the demand. Presently, it appears that vocational education programs at the secondary and post-secondary level are overtraining or oversupplying the job markets in some areas and undersupplying the job market in others. This could be more accurately determined through a research study involving the supply and demand concept in relationship to vocational education training. It appears that at least two variables now make it difficult to match the job supply and demand in the educational training area. The first is the fact that several methods are used to describe and list job openings by education, labor, and industry. The second is that even considering the most valid state and regionwide employment opportunity data available, there is no guarantee that the local education agency will see fit to conduct programs which would balance the supply and demand for workers. Overtraining or undertraining could be the result.

To What Extent Are the Educational Institutions Assuring Job Placements of Graduates?

According to results of the sample survey of high school vocational education programs described in Goal IV, the odds are that a student leaving the high school either by graduation or dropping out receives little assistance in job placement. High schools in Montana basically are still geared to the academic preparation of students not only in curriculum but also in guidance and counseling. Job placement has not been accepted as a significant responsibility of the high school at the present time. The most encouraging aspect of the placement situation appears to be the fact that some teachers at the local level have taken on the extra responibility of aiding their students in locating jobs. This is of significance because the teacher has the opportunity of working with an active advisory committee and can compare job needs with the potential of his students. Excellent services are being provided the students by this method but much more is needed. At the post-secondary level full time counselors serve in a placement capacity and work closely with the employment agency, prospective employers, and other agencies and groups in assisting the student in seeking initial employment. Our evaluation information

does not indicate how much assistance is given to students following initial employment. There is also evidence of need for placement help at the high school level. According to a recent study (1971-1972), secondary students and their parents both felt counselors should do more job placement of students. We encourage such assistance by secondary and post-secondary schools working cooperatively with all agencies that offer employment assistance.

It appears that a high percentage of the 1972 high school graduates with vocational training have chosen to go on to college. This tends to substantiate the supposition that many students who take a vocational course in high school do not commit themselves to an occupational area.

To What Extent is Vocational Education Involved in Manpower Development Programs of the State?

The Montana Manpower Planning Advisory Council now in operation has among its membership the director of Vocational and Occupational Skills and the supervisor of Manpower Development and Training Activities from the Office of the Superintendent of Public Instruction. Also on the council are three members of the Montana Advisory Council for Vocational Education. A total of five people on the eighteen-member manpower council have either a direct or indirect involvement in vocational education. This Manpower Council is the planning agency for various manpower programs including the manpower development programs of vocational education. It includes a cross section of business, management, labor, education, vocational education, and other governmental agencies.

Vocational education administrators are involved in all institutional manpower developmental programs with the exception of some programs which are contracted between private institutions and other organizations. In the case of these contracts vocational education administrators are not specifically involved and are sometimes unaware of these programs. Vocational education administrators are aware of but not involved in programs like the Job Corps. Little contact apparently is maintained with private vocational education schools within the state. Administrators have little general knowledge of types of programs being offered and the number of anticipated job applicants that will be turned out by the private schools.

It is a real challenge for the state to properly coordinate the multitude of public and private manpower programs and eliminate undue overlap and duplication.

To What Extent Are Vocational Education Opportunities Available to All People?

The largest increase in vocational education opportunities took place at the secondary level. A new high of 120 high schools offered some vocational education to their students this past year. The actual enrollment increased by 4,586 students over FY 71, although 43 high schools either offered no vocational education, or sent students to schools that did. Total secondary vocational education enrollment for the past year was 21,293 students. The post-secondary schools, while showing an increase enrollment of 907 over FY 71 did not fulfill the increased demand for training. Evaluation review indicated that there were students unable to enroll because of limited post-secondary vocational education facilities.

The Advisory Council survey indicated many students specifically interested in vocational education felt that more vocational education opportunities would be desirable in their high school. Many students in the state attend small high schools which have limited vocational educational opportunities. The larger high schools tend to provide considerably more vocational education opportunities than do the small high schools.

At the post-secondary level the five post-secondary centers are providing extensive program opportunities for people beyond the high school level. Three community colleges offer several vocational education programs as a part of their curriculum. These were supplemented by vocational education programs at Northern Montana College and by a post-secondary program in the Bozeman Public School System. In addition to programs at the secondary and post-secondary level, vocational education opportunities are available in many communities through adult education programs. This area, however, is one which could be significantly increased through the use of an optional one-mill levy by the local school districts. Of the 163 operating high school districts in the state last year only 24 districts chose to utilize the levy for adult education purposes. Only fourteen of the twenty-four districts levied the full one mill. Use ranged from 100% to 20% of the mill.

Meeting the needs of the disadvantaged and handicapped was discussed under Goal I of this report, but it might be repeated here that only a small number of disadvantaged (1670) and handicapped (550) students were given specific help so they could succeed in vocational education programs. Considerable attention both financially and procedurally should be given this problem.

What Indications Are There That Students Feel Vocational Education Adequately Meets Their Needs?

The Council's student survey was designed to answer this question. A summary of this survey is described in the section beginning

on page 30. Results were not conclusive but there are indications that in general both secondary and post-secondary students find the vocational education system satisfactory.

They were asked, for example, to rate elements of the program. Eighty-two percent of secondary students in the sample, and 95% of post-secondary students rated "pratical application" of the course of study to job requirements as "excellent" or "adequate". Similarly those who rated the "overall training program" excellent or adequate were 91% of the high school, and 98% of the post-secondary students sampled. They were less generous in their ratings of classroom laboratory and shop facilities.

They were overwhelmingly appreciative of the quality of teaching they are receiving. Ninety-six percent of the high school students sampled, rated their instruction excellent or adequate. Seventy-seven percent of post-secondary students rated the instruction in their specialty area excellent or above average.

In few cases during the survey did students voice criticism of their instructors; but several volunteered praise and appreciation for particular teachers in specific programs.

The job placement statistics reviewed indicate that those who do attend post-secondary vocational programs are having their needs met. Placements range near 90% of all completions. Figures on total numbers of students enrolled in private vocational education programs, which were not available, would assist in determining how adequately the vocational education programs of our public schools are meeting the needs of the people. It is possible that part of the private school students may have elected their schools because training in their chosen area was not available in a public vocational school.

What is Being Done About Occupational Awareness and Orientation at the Elementary Level?

Item 10 on page 27 of this report describes the activity at the state and local levels relative to occupational awareness and orientation.

EVALUATION GOAL III

TO WHAT EXTENT HAVE COUNCIL RECOMMENDATIONS BEEN GIVEN DUE CONSIDERATION?

Advisory Council Recommendations and Action Taken Upon Them.

The Advisory Council has made several recommendations, both general and specific, directed to different audiences but always with the goal of improving vocational education in Montana. Primarily the recommendations were directed to the State Board of Education but also, at least indirectly, to the Office of Superintendent of Public Instruction, Department of Labor, state and federal legislative bodies, National Advisory Council on Vocational Education, United States Office of Education, local educational agencies, and the general public.

More than five hundred copies of the Second Annual Report were distributed to the governor, State Board of Education, legislature, Office of Superintendent of Public Instruction, local school districts, news media, general public and many other audiences outside the state.

The Advisory Council is encouraged that all the thirteen recommendations made in the Second Annual Report have been given some consideration. Ten of them were given extensive emphasis and were partially implemented this year.

We commend the cooperative action taken by the State Board of Education and Superintendent of Public Instruction, Dolores Colburg and her staff. The following are recommendations of our 1971 report, and the action taken upon them so far as the Council is aware.

RECOMMENDATIONS	ACTION
1. Greater emphasis be placed upon securing more valid data on dropouts. The Office of the Superintendent of Public Instruction should give first priority to making the entry-exit follow-up system fully operational. Job market information must be collected on a national,	The entry-exit follow-up system is now operational and is supplying enrollment data. A questionnaire survey of high school dropouts is of doubtful value (see page 18), but is currently being upgraded. Better job market information for Montana is now available from

	regional, state, and local basis. The cooperation of all agencies with such information is needed.	the Employment Security Divison, and the Division of Planning and Economic Development has acquired a system that will provide employment data by counties within the state. Data on the regional job market are still not available and are badly needed.
2.	The State Board of Education seriously review the present priorities for expenditures of state education dollars and place additional emphasis on state supported vocational education. The federal government be encouraged to increase its support of vocational education to an amount equal to that provided by the state. Also, school districts especially those in Eastern Montana be encouraged to use the opitional mill levy for adult education. Use of this levy can help to bring vocational education to those unable to reach post-secondary training institutions.	The State Board of Education has recently submitted a budget request calling for a significant increase in state funds for vocational education. The Congress of the United States has tried to increase federal financial support for vocational education, but during the past year has been twice overruled by presidential vetoes. School districts continue to make little use of the opitional one-mill levy for adult vocational education.
3.	The State Board make every effort to solve the problem of construction of the proposed Great Falls building. Also, the State Board should take action to resolve the problem of imbalance and utilization of the post-secondary facilities by one or two levels of vocational education programs.	Proposed legislation has been prepared through the Office of the Superintendent of Public Instruction to eliminate construction effort difficulties, and specifically the problem tying up Great Falls construction funds. In its budget request to the 1973 legislature the State Board of Education has provided for additional construction funds for the Vocational Education Centers. One local school district has passed a bond issue to provide adequate vocational education facilities for secondary vocational students.

4. The Council recommends that the state place a greater emphasis upon meeting the needs of the disadvantaged and handicapped.	The staff of the Superintendent of Public Instruction responsible for the disadvantaged and handicapped in vocational education has developed a handbook to help local schools implement programs for these citizens. Several agencies are cooperatively planning for better utilization of the limited funds available to provide disadvantaged and handicapped with vocational education opportunities; but significant increases in funding are needed to meet the needs of the people.
5. The State Board of Education utilize the information from local advisory committies and the Office of the Superintendent of Public Instruction and cooperate with the Montana Manpower Planning and Development Advisory Council in coordinating program planning and development of vocational education programs throughout the state. Also, make known to other manpower planning groups the availability of training through existing state vocational education programs.	Vocational education has been represented actively on the Governor's Manpower Planning and Development Advisory Council and has participated in coordinated program planning and development. Coordination and planning among state agencies continues to be a need in manpower planning and training programs in Montana.
6. State Board of Education take the leadership in increasing and improving communication with private vocational schools.	This past year, communication has been improved by the appointment of a committee composed of private and public school personnel to work cooperatively on developing recommendations for the State Board's consideration, on licensing of private schools in the state of Montana.
7. Public schools make job placement of the students as important a responsibility of theirs as the actual training and education of the student.	The post-secondary vocational education schools have put additional emphasis on job placement in the past year, and there are some indications that the secondary schools are assuming more responsibility for placement as well. There is continued need for cooperative efforts in job placement between the schools and the Employment Security Division.

8. The board of directors of the Mountain-Plains Education and Economic Development Program, Incorporated located at the former Glasgow Air Force Base establish an advisory committee to the center. And further suggests that Montana Advisory Council for Vocational Education be represented on that comittee.	The Mountain-Plains Education and Economic Development Program , Incorporated to date has not established an advisory committee, and it appears a committee will not be formed.
9. It is recommended that additional publicity, accurate and timely be given to the vocational education program.	This recommendation has received considerable emphasis from the Office of Superintendent of Public Instruction. A cooperatively developed project by the Superintendent of Public Instruction, the State Advisory Council for Vocational Education, and the National Advisory Council for Vocational Education has been prepared. Television and radio spot advertisement of vocational education opportunities for Montana youth will be available early in Fiscal Year 1973.
10. Elementary schools make a strong and organized effort to provide students with an awareness of vocations which may be available to them and how the education system is able to assit them in preparing for the world of work.	Through the leadership of the Office of the Superintendent of Public Instruction, career education from kindergarten through adult has been promoted. One staff member of the Office of Superintendent of Public Instruction has been assigned to provide leadership from that office in the development of career education. Meetings and conferences have been held and are being planned for further development of career education. A needs assesment will be conducted during Fiscal Year 1973 to better determine the career education needs in Montana. A few schools have taken upon themselves the obligation of career education and are providing orientation and awareness opportunities for their elementary students. This activity is certainly consistent with the intent of the Advisory Council in the area of occupational awareness.

We commend the State Superintendent, the State Board, and the local education agencies for this movement and urge continued development of career education.

11. The State Board of Education establish standard program and course titles and description. These titles should be used to refer to any program offerings.

The staff of the Superintendent of Public Instruction is presently working on this problem. Several meetings have been held with those involved in offering programs attempting to develop a standard procedure for identifying programs and courses. This will need continued attention.

12. The State Board take appropriate action to discourage post-secondary schools from advertising courses which they do not actually offer.

This problem appears to be receiving adequate attention from the Office of the Superintendent of Public Instruction. With the cooperation of those involved in conducting programs this problem should soon be eliminated.

13. The State Board of Education review and give further consideration to the recommendations contained in the First Annual Report of the Montana Advisory Council for Vocational Education submitted in September of 1970.

Several of the original recommendations of the 1970 plan have been given additional consideration this past year. Additional in-service training of teachers and guidelines for vocational education for the disadvantaged and the handicapped have been developed. A new plan for vocational education for 1973 is now available for local planning and should be of considerable value. Both the State Board and the Office of Superintendent of Public Instruction have expressed an interest in review and development of position statements, and policy regarding vocational education. A most significant development on the part of the State Board is the creation of a committee for vocational education.

The entry-exit follow-up study has been put into partial operation and is beginning to provide data necessary for local and state planning.

The successful implementation of several council recommendations has been achieved through the cooperative efforts of the Governor's office, State Legislature, State Board of Education, Office of the Superintendent of Public Instruction and the Employment Service. The Council is encouraged by this activity.

Follow-through will be made by the Council on the recommendations that are considered in need of expansion and redirection.

EVALUATION GOAL IV

WHAT DO STUDENTS, TEACHERS, COUNSELORS AND LOCAL ADMINISTRATORS SAY ABOUT VOCATIONAL EDUCATION?

A questionnaire survey was used, in combination with interviews and visitations by the Advisory Council, to learn from those actually involved in the state's vocational education program, their attitudes and evaluations with respect to its operation as it applied to them. Students and teachers, as well as administrators and counselors were included in the survey, and some of what were considered their more significant responses are summarized below.

Several observations about the survey should be made first, however, since its results are subject to several kinds of possible error. First, it did not sample the entire state complex of vocational training programs noted in Table 11 on page 35; but was limited to that part of the total operated by the public school system. Consequently the students in the sample are overwhelmingly in the younger age groups, with the mode falling in ages 16 through 19. Eight percent of the state population falls in this age range, whereas nearly 70 percent of the student sample did so.

Although the attempt was made, in selecting the sample, to get geographical coverage of the state as well as representation from both large and smaller population centers, a formal statistical sampling procedure was not used. The sample included communities with three of the five designated post-secondary vocational education centers (Helena, Butte, and Billings); and two with colleges providing vocational education (Havre and Miles City), and two smaller communities (Shepherd and Twin Bridges) whose secondary vocational education had been aided by so-called "exemplary program" funds.

Although the questionnaires used in conjunction with the interview were designed with the help of people familiar with the design and use of written questionnaires, they cannot be regarded as sophisticated instruments. They were not, for example, validated nor pre-tested on an extensive sample, and in

practice there was no assurance even that the questionnaires would be completed. Although anonymity for the respondents was assured, it seems likely that the results -- especially among the sample of 70 or so teachers -- are vitiated somewhat by the fact that the subjects may not have been completely candid in the judgments and evaluations made. Incomplete returns from supervisors, principals, and other administrators in particular made it hard to draw valid conclusions from their responses.

The sample consisted of 651 secondary and 456 post-secondary students from the seven school systems and 14 schools and colleges. All of the secondary and 97 percent of the post-secondary respondents were full-time students. Marital status of high school students was not checked, but a third of the post-secondary were either married, widowed, divorced or separated. Males and females were evenly represented in the sample of those in post-secondary training while boys out-numbered girls by 6 to 4 among the secondary students. All the fields of vocational study were represented, although some programs are confined to the secondary level while others are given only in the post-secondary schools.

There was evidence that at the secondary level at least, distinctions between what we call "vocational education" and other courses are not necessarily recognized by the students. They were asked, for example, whether the course they are taking is regarded suitable training for the job they would like to have. Nearly half the high school sample answered "no" for various reasons while 92% of the post-secondary answered "yes" with or without some qualifications. Asked how many times they talked with teachers or counselors in selecting the vocational course they are taking, 42% of the secondary students noted they had never talked with a counselor, and 64% had never talked to a teacher.

Reference has been made to the fact that in general, vocational education students in the sample regarded with approval the courses they are taking, and the way they are being taught. The ranking used most often in commenting on the instructors, counselors, facilities, and teaching materials, as well as the training program and its administration, was "Adequate", with two exceptions. Among the nearly 460 post-secondary respondendents, the category used most often to describe "Advice and Help from Teachers", and "Practical Application of Course Work to Job Requirements" was "Excellent". Combined counts of "Excellent," and "Adequate" rankings of all items ranged from 79 to 96 percent among the secondary students, and from 84 to 98 percent for the post-secondary.

In spite of these generally high rankings, however, it is perhaps significant to note that one of the choices given the student was the ranking "Very Poor." There was no program in the sample in which this rating was not used by some students to rate some aspects of their program. The categories on which it was

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used most seldom, by both levels of instruction, were "Over-all Training Program" and "Ability of Instructors to Teach." The categories on which it was used most often among secondary students were "Advice and Help from Counselors" and "Over-all School Administration." Among post-secondary trainees they were "Adequacy of Laboratory or Shop," and "Adequacy of Classrooms." This corresponded fairly closely with the way teachers in the survey ranked elements of their teaching situations. The ranking of "Inadequate" was used most often by them to describe laboratory, shop, and other facilities for teaching.

Secondary students were asked in this connection how they felt vocational education was generally regarded in their high schools, since it was only a part of the total curriculum. Over two-thirds of their responses indicated generally favorable attitudes. Among the 30 percent negative attitudes claimed toward vocational education were such comments as "teachers feel it's for losers;" "opposed to it because it requires more work;" "college education (considered) more important;" "downgraded by other students;" or "not given attention it deserves."

Students were asked for suggestions on improvement of vocational education they had experienced so far, and teachers were asked what they regarded the greatest obstacles to good teaching as they would like to accomplish it. Not surprisingly, the responses of students varied according to which level they were in, and also varied between school systems. High school respondents tended to stress needs for more and better equipment -- except those in communities where they shared facilities with the post-secondary vocational educational school. Post-secondary students also suggested need for more equipment; but both they and the teacher sample stressed needs for more space, allowing for less crowding with consequent better attention to individual needs. Lack of space and time to do a good teaching job was the subject of half the suggestions for improvement offered by teachers.

Two other items from the questionnaire answered by teachers are worthy of note. One asked how many times during the past year the teacher had been visited by the supervisor in his or her field, from the Office of Superintendent of Public Instruction. The results, if this sample of 69 teachers is representative, showed that this kind of communication is (for whatever reasons) fairly rare. Forty percent answered "Never," and another 43 percent gave either once or twice as the number of times this kind of contact was made. Teacher attitudes toward the scarcity of such visits varied from resentment to acceptance of the situation on the grounds that the time of the supervisors could probably be used more profitably elsewhere. This latter attitude was somewhat more characteristic of teachers in the larger school systems. In the sample of small districts in the survey there was evidence not only of need for help, but in some cases an ignorance of the availability of such assistance.

Another question had to do with time spent by the teacher during school hours or at other times, with student vocational educational organizations. Twenty-one of the 69 had responsibility for such youth organizations, averaging something over 3½ hours a week during school time, and over 4½ after school in these activities.

Table 10

Sources of Funding for Vocational Education and Training Programs in Montana

Local Funds

(a) County and Municipal property taxes

State Funds

(b) Educational Foundation Program
(c) Earmarked State Appropriations

Federal Funds

(d) Vocational Education Amendments of 1968
(e) Department of Labor:
  (e_1) Manpower Development and Training
  (e_2) Work Incentive Program
  (e_3) Concentrated Employment Program
  (e_4) On-Job Training Program
  (e_5) Job Opportunities in the Business Sector

(f) Health Education and Welfare
  (f_1) Vocational Rehabilitation
  (f_2) Office of Education Discretionary Funds

(g) Office of Economic Opportunity
  (g_1) Public Service Career Program
  (g_2) Job Corps

(h) Department of the Interior
  (h_1) Bureau of Indian Affairs Programs

Private Funds

(i) Organized Labor Apprenticeship Training
(j) Tuition for Private Schools and Colleges

Table 11

Vocational Training Programs in Montana, and Sources of their Funding

PROGRAM	SOURCES OF FUNDING*
1. Secondary Education	(a) (b) (c) (d)
2. Post-Secondary Vocational Center	(a) (c) (d) (e_1)
3. Adult Education	(a) (c) (d)
4. Training for Disadvantaged	(a) (d) (e_1) (e_2) (e_3)
5. Training for Handicapped	(a) (b) (c) (d) (e_1) (e_2) (e_3) (f_1)
6. Community College Post-Secondary Vocational Training	(a) (c) (d) (e_1) (h_1)
7. Bozeman Post-Secondary Vocational Training	(a) (c) (d) (e_1)
8. Northern Montana College Post-Secondary Vocational Education	(c) (d) (e_1) (h_1)
9. Adult programs at 2,6,7 (above)	(a) (c) (d)
10. MDTA (Manpower Development)	(c) (e_1)
11. WIN (Work-Incentive)	(c) (e_2)
12. CEP (Concentrated Employment)	(e_3)
13. PSC (Public Service Careers)	(g_1)
14. Vocational Rehabilation (Sheltered Workshops, out of state schools)	(c) (e_1) (f_1)
15. OJT (On-Job Training)	(e_4)
16. JOBS (Job Opportunities in Business)	(e_5)
17. Apprenticeship Training	(i)
18. Programs for Indians	(h_1)
19. Mountain-Plains Regional Center (Glasgow Air Force Base)	(f_2)
20. Job Corps Training Centers	(g_2)
21. Pine Hills (School) Mountain View (School)	(c) (d)
22. Private Schools	(j)

*See table 10 for identification of source

Chart 1

Montana Vocational Education and Training Programs, by Trainee Age Group, Classification, and Source of Funding*

Classification	AGE GROUPS		
	Youth	Post-Secondary	Adult
"Normal" Population	1	2, 6, 7, 8, 17, 22	3, 9, 17, 22
Handicapped	5, 14	14	14
Disadvantaged	4	10, 15, 16, 20	10, 15, 16
Low Income	12	12, 13	11, 12
Minorities	18, 19	18, 19, 13	18, 19
Penal Pop.	21, 12	21, 12	10

* Sources of Funding:

Local

State

Federal

Private

* Program Identification: Numbers 1 through 22 see table 11, page 35.

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APPENDIX A

MONTANA ADVISORY COUNCIL
FOR VOCATIONAL EDUCATION

Mrs. Linda Skaar, Chairman
Bozeman

Joe Crosswhite, Vice-chairman
Columbia Falls

Fred Barrett
Helena

Carl T. Blaskovich, Jr.
Anaconda

Jack C. Carver
Helena

William Casto
Helena

William L. Erickson
Havre

Jack Gunderson
Power

S. Gregory Hamlin, Jr.
Helena

Patrick J. Kelly
Miles City

William Korizek
Helena

Wesley Lambert
Fort Benton

Wallace E. McCulloch
Kalispell

Francis T. Peterson
Miles City

Joe A. Renders
Great Falls

Perry F. Roys
Helena

Harold L. Wenaas
Great Falls

Mrs. Tom Yellowtail
Wyola

William A. Ball, Executive Director
Helena

Evaluation Committee: Richard Draper*, Chairman; Wallace McCulloch, Frank Peterson, Pat Kelly, Joe Renders, and Linda Skaar.

*Mr. Draper is the alternate member to the Council for Mr. Roys.

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APPENDIX B

STATE BOARD OF EDUCATION

Governor Forrest H. Anderson (ex officio), President
Helena

Superintendent Dolores Colburg (ex officio), Executive Officer for Vocational Education
Helena

Attorney General Robert L. Woodahl (ex officio)
Helena

Mrs. Marjorie King
Winnett

Boynton G. Paige
Philipsburg

John D. French
Ronan

Fred H. Mielke
Havre

T.T. Heberly
Havre

Mrs. Harriett Meloy
Helena

Rt. Rev. Msgr. Anthony M. Brown
Great Falls

Mrs. Louise R. Galt
Helena

Robert Sorenson, Student Representative (non-voting)
Missoula

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APPENDIX C

RESOLUTIONS SUBMITTED
TO
STATE BOARD OF EDUCATION
SEPTEMBER 1972

I. Career Education

Whereas - There are 20,000 possible careers in America, diverse enough to encompass everyone's abilities, and

Whereas - 2.5 million young people each year graduate from high school or college with no planned career and few, if any, marketable skills, and

Whereas - Career education is a motivating and goal-setting adventure in education, and

Whereas - Career education is a systematic way to acquaint students with the world of work in the elementary and junior high years and to prepare them in high school and post-secondary education to advance in a career field carefully chosen, and

Whereas - Career education is a way for adults to re-enter formal education and upgrade their skills in their career field or to enter a new field, and

Whereas - Career education has been designated the number one priority of the U.S. Office of Education by S.P. Marland Jr., Commissioner of Education, and

Whereas - The President of the United States has made Career Education a White House Priority, giving it special emphasis in his 1972 State of the Union Message to Congress, and

Whereas - Members of the Council of Chief State School Officers have pledged a major effort to gain legislative and public endorsement in individual states;

Therefore be it resolved that: The Montana Advisory Council for Vocational Education go on record in favor of the Career Education concept and recommend the State Board of Education, as the highest policy making Board for Education in Montana, accept the concept and reflect such acceptance in its biennium budget in support of education in Montana.

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II. Post-Secondary Vocational Education

Whereas - Post-secondary vocational education is extremely important because at this level, education hits hard at preparation for vocational and technical occupations, and

Whereas - The age group served by post-secondary vocational education is exceedingly important to the social and economic development of the nation, and

Whereas - It is predicted that only 15-20 percent of the jobs of the present and future are going to demand training of a baccalaureate degree or higher, and

Whereas - The system of learning skills at home or on the farm is being lost as the agrarian society becomes urban and suburban in living habits, and

Whereas - Vocational education is recognized by business and industry and honored as a preemployment requirement, and

Whereas - More and more employers request preparation or experience as an employment requirement, and

Whereas - The Congress of the United States has enacted legislation with specific emphasis on post-secondary vocational education to assist each state in strengthening and expanding post-secondary vocational education, and

Whereas - The demand for post-secondary vocational education by students is far from being met in Montana, and

Whereas - Montana, until 1969, did little in the way of post-secondary vocational education has yet a great distance to go to catch up in this area of education, (only 6.2 percent of age 20-24 people in Montana are enrolled in post-secondary vocational education), and

Whereas - Of all those persons in Montana receiving vocational education, manpower training, or apprenticeship training, 90 percent of the training is done by the vocational education system;

Therefore be it resolved that: The Montana State Advisory Council go on record in favor of additional state legislative support for post-secondary vocational education and recommends to the State Board of Education that the Board give strong budget and administrative support to post-secondary vocational education.

III. State Appropriations For Vocational Education

Whereas - Educational costs at the local level are experiencing the same cost of living increase that business and private families are experiencing, and

Whereas - Vocational education expenditures are sometimes greater than regular education costs, and

Whereas - This additional cost at the local level creates an undue constraint on vocational educational opportunities for students because of local budget limitations, and

Whereas - Montana ranks 32nd out of 50 states in enrollment in vocational education per 1000 population with only 39 out of every 1000 enrolled in any type of vocational education, and

Whereas - Every citizen has the right to equal educational opportunity whatever his educational pursuit may be, and

Whereas - The most appropriate method of providing this equality is through direct state and federal appropriation of funds for vocational education;

Therefore be it resolved that: The Montana State Advisory Council for Vocational Education go on record in support of significantly increased state appropriations for all vocational education and recommends that the State Board of Education submit to the legislature an appropriation request reflecting a significant increase of state funds for vocational education.

IV. Post-Secondary Vocational Technical Facilities

Whereas - The past four years history of vocational education indicates a 100 percent increase in the number of vocational education students in Montana, and

Whereas - Adequate vocational education facilities now are in critically short supply because of this tremendous student increase, and

Whereas - Present vocational education facilities are unable to meet the demands now made upon them by Montana students, and

Whereas - The vocational education enrollment trend is predicted to continue throughout the next two decades, and

Whereas - The need for additional vocational education facilities needs immediate attention, and

Whereas - It is conceivable that several different avenues are possible in the development of adequate vocational education facilities;

Therefore be it resolved that: The Montana State Advisory Council go on record in favor of a continued systematic development of post-secondary vocational education facilities and recommend the State Board of Education propose and support legislative action which would eliminate the present dilemma regarding the leasing, purchasing, or construction of adequate post-secondary vocational education facilities and provide financial means to meet the facility needs of present and future post-secondary vocational education that Montana youth and adults may be more adequately provided the educational opportunity expressed in Article X of the newly adopted constitution of Montana.

V. Status of Vocational Education

Whereas - Vocational Education is an educational component that is involved in all levels of education including elementary through adult, and

Whereas - The growth and development of Montana vocational education has been outstanding in the past three years, and

Whereas - Available data indicates that student demand for such educational opportunities is only emerging, and

Whereas - The financial resources of the state of Montana must be carefully distributed to adequately provide for the education and well being of its citizenry, and

Whereas - The maximum development of Montana's human resources is greatly dependent upon equal educational opportunity for all citizens, and

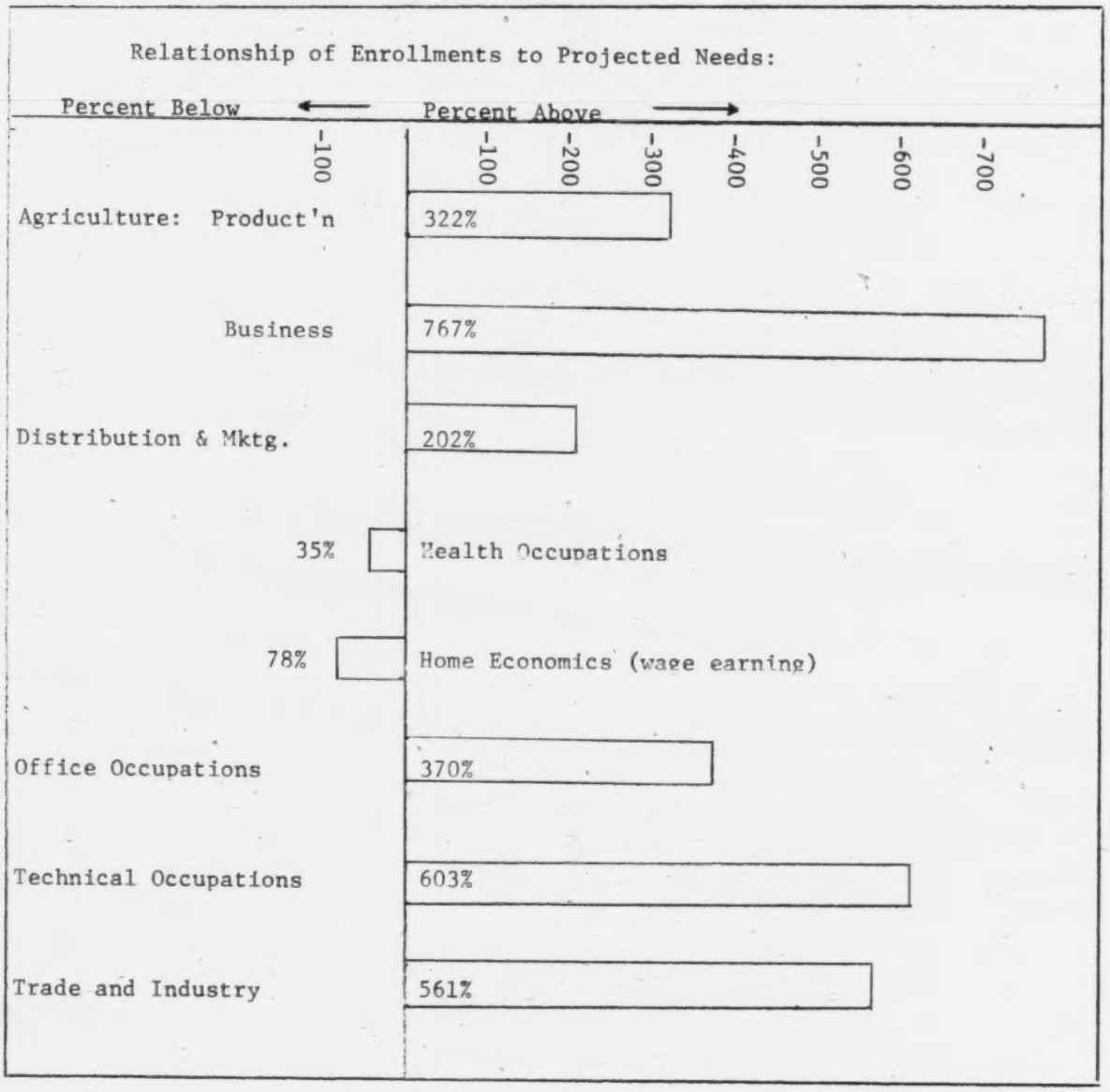
Whereas - Such development is in the best interests of the entire state of Montana, and

Whereas - The adoption of the new Montana constitution, the creation of the Department of Education forthcoming by the enactment of the Executive Reorganization Law of 1971 and new federal legislation for post-secondary vocational education each provide unique and in some cases critcally important problems to the overall administration of vocational education, and

Whereas - A continued systematic and orderly development of vocational education is called for in present state statutes;

Therefore be it resolved that: The Montana State Advisory Council go on record in support of a thorough review of the legislative status of vocational education. Further, we recommend the State Board of Education promote such a study and they request the assistance of all available sources to conduct this review and to prepare proposed legislation recommended by the review.

Appendix D
Secondary, Post-Secondary, Adult Public Vocational Education Enrollments Compared to Projected Needs for Manpower -- 1972



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JACKSON, WILLIAM W.
QUALIFICATIONS OF ENGINEERING TECHNOLOGY TEACHERS IN THE STATE TECHNICAL INSTITUTES OF TENNESSEE.

MF AVAILABLE IN VT-ERIC SET.
PUB DATE - MAY71 82P. M.S. THESIS, MEMPHIS STATE UNIVERSITY, TENNESSEE

DESCRIPTORS - MASTERS THESES; *TEACHERS; *ENGINEERING TECHNOLOGY; *TEACHER QUALIFICATIONS; TEACHER EXPERIENCE; *VOCATIONAL EDUCATION TEACHERS; ENGINEERING EDUCATION; *TECHNICAL INSTITUTES
IDENTIFIERS - *TENNESSEE TECHNICAL INSTITUTES

ABSTRACT - SUMMARIZED IN THIS DOCUMENT ARE THE RESULTS OF A STUDY CONDUCTED TO DETERMINE THE QUALIFICATIONS OF ENGINEERING TECHNOLOGY TEACHERS IN TENNESSEE TECHNICAL INSTITUTES. VARIABLES BEING INVESTIGATED WERE: (1) PRIOR WORK AND EDUCATIONAL EXPERIENCE, (2) AMOUNT OF TIME SPENT ON VARIOUS TASKS, (3) INSERVICE EXPERIENCE, AND (4) LEVELS OF AGREEMENT OR DISAGREEMENT WITH STATEMENTS CONCERNING THE TRAINING OF TECHNICAL TEACHERS. SURVEYED WERE THE 46 TEACHERS IN STATE TECHNICAL INSTITUTES RESPONSIBLE FOR TEACHING ENGINEERING CLASSES. A TOTAL OF 41 QUESTIONNAIRES WERE RETURNED. FINDINGS AND CONCLUSIONS INCLUDE: (1) THE DEGREE FOUND TO BE MORE POPULAR AMONG INSTRUCTORS PRIOR TO TEACHING WERE THE B.S. AND MS. IN ENGINEERING, (2) THE DEGREES MOST INSTRUCTORS WOULD HAVE LIKED TO HAVE HAD WERE THE B.S. AND M.S. IN ENGINEERING, (3) A GREAT VALUE IS PLACED ON INDUSTRIAL EXPERIENCE, (4) IT WAS AGREED THAT MOST TEACHERS' COMPETENCIES SHOULD BE IN THE AREAS OF ALGEBRA, TRIGONOMETRY, CALCULUS, AND DIFFERENTIAL EQUATIONS AS WELL AS BASIC SCIENCE, (5) IT WAS FELT THAT EXPERIENCE SHOULD BE A FACTOR IN ACCEPTING AND PROMOTING TECHNICAL TEACHERS, (6) A RETURN TO INDUSTRY FOR PROFESSIONAL DEVELOPMENT WAS FAVORED OVER THE PUBLISHING OF PAPERS, AND (7) SUMMER INSTITUTES AND ACADEMIC EXCHANGES BETWEEN THE SCHOOL AND INDUSTRY WAS SEEN AS AN IMPORTANT DEVELOPMENT TO CONSIDER. (AUTHOR/SN)

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QUALIFICATIONS OF ENGINEERING TECHNOLOGY TEACHERS IN THE STATE TECHNICAL INSTITUTES OF TENNESSEE

BY

WILLIAM W. JACKSON

A Research Report Submitted in Partial
Fulfillment of the Requirements for the Degree
of
Master of Science
in Technical Education

Approved:

Kenneth L. Reeves
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May 1971

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INTRODUCTION

The explosion of knowledge and advances in technology created changes in work skills and employment practices that prompted the Federal Government to increase funding for vocational schools and technical training. The number of vocational schools and technical institutes has increased dramatically within the last few years.

While federal funding has helped, it has not eliminated all of the problems that continue to plague administrators. Maurice Seay (1965, pp. 160-163) states that the three most important problems are (1) the need for effective guidance, (2) the need to build prestige, and (3) the need for more and better trained teachers. Seay is not alone in his opinion; Norman Harris stated that finding technical teachers "... is the single most critical challenge facing the community college movement as a whole" (Emphasis, 1966, p. 57). Expansion and development of technical educational programs cannot take place without the dedicated services of adequate numbers of professionally qualified teachers. Dobrovolny states:

> ...one of the principal restrictive forces preventing greater expansion of these programs has been a short supply of qualified teachers. To meet the critical need a new approach must be taken. But before discussing some of these new approaches we should identify the qualifications of a competent teacher (Dobrovolny, 1970, TE1).

The State of Tennessee is now faced with these problems. New approaches are called for, but before these new approaches can be determined we need to identify the qualifications of a technical

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teacher in the State Technical Institutes of Tennessee.

PROBLEM STATEMENT

The problems of this investigation were to determine the qualifications of Engineering Technology teachers in the Technical Institutes of Tennessee concerning : (1) work and educational experience prior to technical institute teaching: (2) the amount of time spent on various tasks: (3) in-service experience and, (4) to determine levels of agreement or disagreement with statements concerning the training of technical teachers.

OBJECTIVES

The specific objectives of this study were as follows:

1. To review the literature in order to determine what has been done in other parts of the country concerning technical teacher qualifications.

2. To modify and adapt sections of the instrument used by Dr. Richard S. Eno for use in this study.

3. To analyze the data in Parts A and B, Section I, with an item analysis by reporting numbers and percentages.

PROCEDURE

A questionnaire was designed and mailed to all the teachers of Engineering Technologies in the State Technical Institutes of Tennessee. Forty-six of the questionnaires were distributed and forty-one were completed and returned. No attempt was made to identify the respondents.

The questionnaire (Appendix A) was a four section instrument utilized as follows:

1. Section I delt with the academic and industrial preparation of teachers prior to assuming teacher's duties. Section I also requests

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that the teachers express what preparation they would like to have had prior to assuming teacher duties. The responses to this section and a conclusion are reported in the section titled Professional Development Prior to Entering Teaching.

2. Section II delt with six types of in-service training undertaken and their effect on teaching. The responses to this section were tabulated and reported in the section titled Professional Development After Entering Teaching.

3. Section III delt with the time spent on various teaching tasks. The teachers were asked to review a task inventory and to check each item that required at least thiry minutes of his time per week on a regular basis. The responses to this section are reported in the section titled Educational Tasks Inventory.

4. Section IV delt with the comments and levels of agreement and disagreement with regard to a number of statements concerning teaching of courses and the facilities for developing technical teachers. The responses to this section are reported in the section titled Opinions Regarding the Teaching of Technical Courses in Tennessee State Technical Institutes.

LIMITATIONS

The specific limitations of this study were as follows:

1. To the State Technical Institutes of Tennessee.
2. To the following subject areas:
   (a) Architectural Engineering Technology
   (b) Chemical Engineering Technology
   (c) Civil Engineering Technology
   (d) Electrical Engineering Technology

(e) Electronic Engineering Technology

(f) Industrial Engineering Technology

(g) Instrumentation Engineering Technology

(h) Mechanical Engineering Technology

(i) Nuclear Engineering Technology

ANALYSIS OF DATA

PROFESSIONAL DEVELOPMENT PRIOR TO ENTERING TEACHING

Table 1 reports the data obtained from Section I of the questionnaire. This table shows in Part A the number of responses to each item and the percentage of the total number of responses to each degree held prior to teaching. In Part B the table shows the number and percentages of the total number of responses of those degrees most desired by those now teaching.

From Table 1 it can be seen that, other than a high school diploma, the most popular degree held prior to entering teaching was the B.S. in Engineering held by fifty-six percent of the practicing teachers. Of the desired degrees the M.S. in Engineering was checked by sixty-five percent of the group followed by sixty-one percent for the B.S. in Engineering. One item worthy of note was item number sixteen. Only one checked as having the technical education degree prior to teaching and twenty-six percent checked the degree as being desirable.

The responses to Part C of Section I are shown in Table 2. This table states the item number, the actual number of responses out of the total number of returns, and the average number of years of related work and teaching experience indicated by the responses.

Table 1

PROFESSIONAL DEVELOPMENT, ACTUAL AND DESIRED

Item No.	Item Name	Part A No.	Part A %	Part B No.	Part B %
1.	High School	31	75%	22	53%
2.	Two Year Engineering	0	0	2	5%
3.	Associate in Arts	1	2%	0	0
4.	Associate in Science	0	0	0	0
5.	B.S. Vocational Ed.	0	0	0	0
6.	B.S. Tech Ed.	0	0	1	2%
7.	B.S. Engineering	23	56%	25	61%
8.	B.S. Science	10	24%	6	14%
9.	B.S. Technology	2	5%	1	2%
10.	B.S. Secondary Ed.	1	2%	0	0
11.	B.S. Industrial Ed.	1	2%	1	2%
12.	M.S. Vocational Ed.	1	2%	1	2%
13.	M.S. Engineering	12	29%	19	65%
14.	M.S. Science (Math, Physics, etc.)	6	14%	4	10%
15.	M.S. Education	3	7%	1	2%
16.	M.S. Tech Ed.	1	2%	11	26%
17.	M.S. Ind. Ed.	1	2%	2	5%
18.	Ed. Specialist (Masters + 45 hrs.)	1	2%	2	5%
19.	Doctorate	1	2%	2	5%
20.	Registered P.E.	11	26%	21	51%

Table 2

RELATED WORK AND TEACHING EXPERIENCE

Item No.	Item	Number Responses Out of 41 Returns	Average No. of Years Indicated
1.	In-depth related work experience	34	10.7
2.	High School teaching experience	6	5.80
3.	Four year college teaching experience	10	3.93
4.	Military technical teaching experience	11	7.0
5.	Military related work experience	19	13.0

Table 2 points out the large number of instructors who have in-depth related work experience. There is a relatively small number of those with High School teaching experience. Another significant point to be gained from this table is the large number of responses with military teaching and military work experience.

Part D of Section I deals with the professional licenses held and any other preparation not stated in Parts A, B, and C. Table 3 reports all professional licenses held by the forty-one respondents prior to starting technical teaching.

Table 3

PROFESSIONAL LICENSES HELD

License	No. Held
None	26
Registered P.E.	11
FCC Commercial Class Radio Telephone	1
Teacher's Certificate	2
Architect	1
NCARB Certificate	1
FCC First Class Radio Telephone	1
FAA-Ground Instructors License	1

Table 4 reports all other preparation of instructors not reported in prior sections. Table 4 is a listing of the preparation as reported by the respondents.

Table 4

OTHER PREPARATION NOT REPORTED

Number of responses 41

No.	Preparation
30	No other preparation.
1	Professional Society-Functions-Papers-Programs-Awards-etc.
1	One year graduate course at Penn. State Univ. sponsored by NSF which led to a MS in Eng.-included two graduate education courses and practice teaching at associate degree level.

Table 4 (continued)

No.	Preparation
1	Publications (1) Author of National Magazine article (2) Author of a book
1	Senior Engineering Technician
1	Teaching-Radio Communication, Radar, Bendix Field Eng., Radio Broadcast, Instrumentation Technician
1	Served equivalent of 4 apprentices; taught various company job training courses; had post graduate courses in Vocational, Industrial, Engineering and Science fiels.
1	Attended Architectural Design Seminars sponsored by Memphis Chapter American Institute of Architects.
1	Correspondence courses in Service and Communications (Electronics)
1	Graduate Research and Consulting Research
1	Research Institute 3 yrs.
1	Research and executive experience in industry-Research Chemist and Control Director for Chattanooga Medicine Company.

PROFESSIONAL DEVELOPMENT AFTER ENTERING TEACHING

Section II of the questionnaire delt with the accomplishments undertaken since entering technical teaching.

Table 5 indicates the individual responses to Item 1 of this section. The data provided under the heading "Effect on Teaching" in Tables 5,6,7,8,9, and 10 do not necessarily reflect the true value of the course. The respondent to the questionnaire could have felt that the material offered within a given course did not apply to the specialty he was teaching, or he felt he was a good teacher before taking a specific course. Also the level of the course could have been above

or below the courses being taught by the respondent.

Of significance in this table is the number of instructors (six) seeking advanced degrees in some field of education while only half that number are seeking advanced degrees in engineering. This seems to indicate a number of things: (1) these instructors feel competent in their technical specialty and seem to be lacking in educational background, (2) they simply want some teacher preparation, or (3) they feel it is the easier or quicker degree to obtain at the masters level.

Table 5

DEGREES COMPLETED OR IN PROCESS SINCE ENTERING TECHNICAL TEACHING AND ATTITUDE ON EFFECT TOWARD TEACHING

Number of responses 41

Number seeking no degree 28

Degree Sought	Area of Study	College or Univ.	Effect on Teaching Excel.	Good	Poor
M.S.	Tech. Ed.	Memphis State			x
M.S.	Tech. Ed.	Memphis State	x		
M.S.	Tech. Ed.	Memphis State			x
M.S.	Teaching Tech. Methods	U. of Tenn.			x
Not Specified	Eng. Tech. Ed.	U. of Tenn.	x		
Not Specified	Math. Ed.	Middle Tenn. S. U.			x
M.S.	Electrical Eng.	Memphis State			x
M.S.	Mech. Eng.	Miss. State			x
Not Specified	Chem. Eng.	U. of Okla.	x		

Table 5 (continued)

Degree Sought	Area of Study	College or Univ.	Effect on Teaching Excel.	Good	Poor
M.S.	Physics	U. of Chat.			x
M.S.	Counseling	U. of Va.	x		
M.B.A.	Management	Memphis State			x
Phd.	Business	U. of Miss.			x

Table 6 deals with item No. 2 of Section II and reports the engineering subjects studied since entering technical teaching.

Table 6

ENGINEERING SUBJECTS STUDIED SINCE ENTERING TECHNICAL TEACHING AND ATTITUDE ON EFFECT TOWARD TEACHING

Number of responses 41

Number studying no engineering subjects 31

Subjects	Total Hrs. Earned *	College or Univ.	Effect on Teaching Excel.	Good	Poor
Advanced Microwave	3	Memphis State			x
Industrial Electronics	4	U. of Ill.			x
Electrical Ckt. Analysis	4	U. of Ill.			x
Industrial Electronics	6	Oak Ridge	x		
Digital Ckt. Design	3	U. of Tenn.	x		
Integrated Circuits	3	Memphis State			x

Table 6 (continued)

Subjects	Total Hrs. Earned *	College or Univ.	Effect on Teaching Excel.	Good	Poor
Electrical Eng.	6	Memphis State		x	
Space Age Technology	6	Old Dominion Norfolk, Va.	x		
Intro. to Eng. Tech.	4	Memphis State		x	
Eng. Economy	3	U. of Tenn.	x		
Control Engineering	3	U. of Tenn.	x		
Fortran	2	Miss. State	Not Applicable		
Statistical Quality Cont.	3	Memphis State			x
Production Control	3	Memphis State			x
Eng. Analysis	3	Memphis State		x	

* Quarter hours or semester hours not indicated on questionnaire.

The majority of Engineering subjects studied are electrical or electronic. Very few mechanical, civil, or architectural subjects were reported.

The responses to item 3 of the questionnaire are reported in Table 7. This table reports all of the education subjects studied since entering technical education, the total number of hours earned, the College or University, and its effect on teaching.

Table 7

EDUCATION SUBJECTS STUDIED SINCE ENTERING TECHNICAL TEACHING AND ATTITUDE ON EFFECT TOWARD TEACHING

Subject	Total Hrs. Earned *	College or Univ.	Effect on Teaching Excel.	Good	Poor
Audio Visual Workshop	3	Peabody			x
Audio Visual	3	Peabody	x		
Audio Visual Aids	6	Associated Univ.			x
Not Specified	9	U. of Tenn.		x	
Not Specified	6	U. of Tenn.		x	
Not Specified	14	Middle Tenn. State		x	
Not Specified	39	U. of Va.	x		
Not Specified	30	Memphis State		x	
Child and Adolescent Psychology	3	_____			x
Psychology	—	Memphis State		x	
Ed. Psychology	3	Memphis State		x	
Human Relations	12	Memphis State		x	
Curriculum Development	3	U. of Tenn.		x	
Program Planning	3	Memphis State	x		
Shop Organization and Management	3	U. of Tenn.		x	
Educational Materials	6	Associated Univ.			x
Math	9	U. of Chat.		x	
Instructional Objectives	4	Informal		x	

Table 7 (continued)

Subject	Total Hrs. Earned *	College or Univ.	Effect on Teaching Excel.	Good	Poor
Teaching Methods	3	Memphis State			x
Teaching Methods	3	Informal			x
Ind. Ed.	6	U. of Tenn.			x
Technical Ed.	6	_____			x
Technical Ed.	12	Memphis State	x		

* Quarter hours or semester hours not indicated on questionnaire

The responses to item 4 of Section II are reported in Table 8. In this table the subject, the number of hours earned, the College or University, and the effect on teaching are reported.

Table 8

SCIENCE SUBJECTS STUDIED SINCE ENTERING TECHNICAL EDUCATION AND ATTITUDE ON EFFECT TOWARD TEACHING

Number of responses 41

Number studying no Science subjects 32

Subject	Total Hrs. Earned *	College or Univ.	Effect on Teaching Excel.	Good	Poor
Chemistry	10	Memphis State			x
Inorganic Chem.	4	Louisiana State	x		
Math	14	U. of Tenn.	x		

Table 8 (continued)

Subject	Total Hrs. Earned *	College or Univ.	Effect on Teaching Excel.	Good	Poor
Mathematics	15	U. of Chat.			x
Calculus I	4	Memphis State	x		
Physics	18	U. of Chat.			x
Physics	4	U. of Tenn.	x		
Thermodynamics	3	Louisiana State	x		
Quantative Methods	9	Memphis State	x		
Psychology	3	Memphis State	x		
Fortran Programming	3	Memphis State			x
Advanced Computer Programming	3	Memphis State			x
Not Specified	17	Middle Tenn. State			x

* Quarter hours or semester hours not indicated on questionnaire

The related industrial experience since entering technical teaching is reported in Table 9. This table reports the area of work, the company, the number of months employed, and its effect on teaching.

Table 10 reports the responses dealing with professional licenses obtained, and special courses taken, their location and their effect on teaching.

Table 9

RELATED INDUSTRIAL EXPERIENCE SINCE ENTERING
TECHNICAL TEACHING AND ATTITUDE
ON EFFECT TOWARD TEACHING

Number of responses 41

Number having no related industrial experience since entering technical teaching 32

Area of work	No. of Months	Company	Effect on Teaching Excel.	Good	Poor
Associated with TVA Industrial Mechanics Training Program	3	TVA			x
Outside Consulting Work	___	___			x
Feasibility Study for U.S. Ship Missile System Engineering Station	3	U.S.Navy	x		
Individual Study in Solid State	24	Self			x
Considerable Counsulting	____	Numerous			x
Private Architectural Practice	6	Self	x		
Assisted with Educational Software related to Design and Sales of Educational Electrical Machinery	3	Hampden Eng. Corp.	x		
Consultant	Continuous	Chat. Eng. Co.	x		
Did Electronic design work for one summer	2	Gen. Elec.			None

Table 10

PROFESSIONAL LICENSES OBTAINED AND SPECIAL COURSES TAKEN SINCE ENTERING TECHNICAL TEACHING AND ATTITUDE ON EFFECT TOWARD TEACHING

Number of responses 41

Number obtaining no licenses or taking no special courses 31

Course or License	Location	Effect on Teaching Excel.	Good	Poor
Ultra Violet Visible Spectrophotometer	S.T.I.M.	x		
Gas Chromatography	S.T.I.M.	x		
Water and Waste Water Pollution	S.T.I.M.	x		
Computer Programming	S.T.I.M.			x
Computer Science	S.T.I.M.		x	
Magnetic Circuit Design	U. of Colo.			x
9 Week Industrial Refresher	Oak Ridge	x		
Amateur Radio License Advanced Class-AFCEA Member	Home	x		
Professional Eng. Lic.	So. Carolina			None
Professional Eng. Lic	Tenn.	x		

EDUCATIONAL TASK INVENTORY

Table 11 reports the responses to the third section of the questionnaire. This section was a list of teacher tasks. Each respondent was asked to check each task which took thirty minutes or more per week of his time on a regular basis.

Table 11

EDUCATIONAL TASK INVENTORY

Number of responses 40

Item No.	Task	Number of Responses	Responses %
1.	Preparing, administering, scoring, and recording grades	39	97.5
2.	Preparing Laboratory experiments	36	90
3.	Review and evaluate instructional materials, texts and reference materials for potential use	33	82.5
4.	Maintenance of student records	28	70
5.	Maintenance of equipment	19	47.5
6.	Inventory course supplies and equipment	15	37.5
7.	Preparation of requests for supplies and equipment	17	42.5
8.	Preparation and monitoring of safety programs	7	17.5
9.	Preparation and grading of homework	36	90
10.	Preparation of lecture and laboratory presentations	39	97.5

Table 11 (continued)

Item No.	Task	Number of Responses	Responses %
11.	Participations in meetings and conferences	28	70
12.	Participations in tours and orientations	15	37.5
13.	Selections and preparations of audio visual equipment	16	40
14.	Develop and set up exhibits and displays	5	12.5
15.	Conduct field trips	12	30
16.	Preparation of instructional materials	31	77.5
17.	Formulate objectives and select instructional content for a course	26	65
18.	Organization of advisor committees	10	25
19.	Plan and organize the activities of work-study students or laboratory technicians	18	45
20.	Selection of tools and equipment	14	35
21.	Preparation of materials for educational journals	0	0
22.	Maintain liason with teachers in other disiplines within the school	22	55
23.	Participate as a member of professional organizations	19	47.5
24.	Maintain or improve technical competence in area of specialty	31	77.5
25.	Participate in registration precedures	18	45
26.	Participate in in-service training programs	14	35

Table 11 (continued)

Item No.	Task	Number of Responses	Responses %
27.	Participate in or conduct research studies	5	12.5
28.	Perform consultant services to school and professional educational organizations	0	0
29.	Perform technical writing	2	5
30.	Assist students in planning their educational programs	31	77.5
31.	Pursue advanced degree program	11	27.5
32.	Assist students with academic problems	37	92.5
33.	Assist students with academic, personal and social problems	16	40
34.	Assist students with job related problems	20	50
35.	Brief potential students on the school's programs	20	50
36.	Confer with guidance counselors	12	30
37.	Counsel students into appropriate programs of study	14	35
38.	Participate in non-instructional school duties (e.g.: ticket sales and chaperoning students events).	9	22.5
39.	Sponsor and advise clubs, societies and special interest groups (e.g.: athletics, school publications, honor societies, student government).	15	37.5
40.	Other (write in)		
	a. Administrative duties	1	2.5
	b. Work season	1	2.5

In the tabulation of the responses for Table 11 it was found that several of the respondents filled out the first page and ignored the second. For this reason it is felt by the writer that insufficient data has been collected for any conclusions or recommendations.

The purpose of this section of the instrument was to collect enough data regarding the teaching task that recommendations could be made concerning the elimination or the addition of these tasks in technical teacher training programs. This area of study is broad enough to be the subject of another, more intensive study.

OPINIONS REGARDING THE TEACHING OF TECHNICAL COURSES IN TENNESSEE STATE TECHNICAL INSTITUTES

In this section of the responses and comments to a number of statements regarding the teaching of technical courses are reported. The statements called for levels of agreement or disagreement. These levels are reported in the tables following each statement along with the number and percentage of responses. The comments listed after each table are the comments made by the respondents in filling out the questionnaire. The levels of agreement or disagreement have been added in parenthesis in order to clarify the comment. The comments are stated verbatim.

Statement 1

Technical teachers should be versatile enough to satisfactorily teach the basic science courses (e.g. mathematics, physics, chemistry) as well as the technical courses in their respective specialties.

Table 12

Responses to Statement 1

Number of responses 41

Percentage by level	7.3%	9.7%	7.3%	0%	21.9%	21.9%	31.7%
Response by level	3	4	3	0	9	9	13
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 1:

1. Answer applies to Engineering Technology (Disagree-level 1).
2. Because ques. suggest that this be done (Disagree-level 3).
3. To be versed in their particular field the teachers would have to be versed in the basic sciences (Agree-level 3).
4. Related and technical must be coordinated (Agree-level3).
5. A teacher out of his field is no better than a substitute teacher in grammar school (Disagree-level 3).
6. Such would be desirable but not an essential as in indicated by the word should (Disagree-level 2).
7. Nice to have but not necessary (Disagree-level 2).
8. If you mean to be competent in these areas I agree. However, I do not believe that technical teachers should teach math, physics courses and etc. (Disagree-level 2).

Almost seventy-five percent of the respondents agreed with this statement. The comments, however, indicated that some instructors viewed the statement as a threat that they would have to teach basic courses and not just be competent enough to teach them.

Statement 2

Technical teachers should teach only those courses for which they have had rigorous industrial experience.

Table 13

Responses to Statement 2

Number of responses 41

Percentage by level	9.7%	21.9%	11.9%	9.3%	26.8%	11.9%	9.7%
Response by level	4	9	5	3	11	5	4
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 2:

1. Most industrial experience is not very meaningful (Disagree-level 1).
2. What is rigorous (Disagree-level 1)?
3. You have to know it to put it across (Agree-level 3).
4. Technology is developing too rapidly (Disagree-level 3).
5. Certain subjects and labs that are specialized (Agree-level 3).
6. The preparation of the student is directed toward preparing him for industry. Without experience in the field the instructor cannot teach his field adequately (Agree-level 1).
7. Courses on basic principles don't necessarily relate well as "rigorous industrial experience" (Disagree-level 2).
8. Some exp. but not rigorous (Agree-level 1).

Due to the lack of agreement regarding this statement no significant conclusions can be drawn.

Statement 3

Graduates coming directly from colleges of vocational and/or industrial education do not qualify from the standpoint of subject matter competency to teach technical courses in engineering technologies.

Table 14

Responses to Statement 3

Number of responses 41

Percentage by level	9.7%	2.4%	11.9%	11.9%	17%	19.5%	26.8%
Response by level	4	1	5	5	7	8	11
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments by Respondents With Regard to Statement 3:

1. Except lab technician work (Agree-level 2).
2. Couple the educational background w/some industrial and/or military training for a better contribution (Disagree-level 1).
3. The preparation of the student is directed toward preparing him for industry. Without experience in the field the instructor can not teach his field adequately (Agree-level 3).
4. Most don't even know what engineering is all about (Agree-level 3).
5. Depends very much on the individual (Level 0).
6. In general, I feel that a minimum of 4 years should be spent in industry. My field, electronics, is developing so rapidly that few vocational and/or industrial educational colleges can keep up (Agree-level 1).

Again the majority of the responses agree with this statement. Some of the comments indicate that graduates of these programs that have military or industrial backgrounds do qualify.

Statement 4

Ideally, the technical teacher should have a depth of mastery in his technical field of a type and level roughly equal to that of a more practical undergraduate engineering curriculum which preceded the abstract, highly theoretical engineering curricula so prevalent today.

Table 15

Responses to Statement 4

Number of responses 40

Precentage by level	2.5%	2.5%	10%	5%	15%	32.5%	25%
Response by level	1	1	4	2	6	13	10
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comment By Respondents With Regard to Statement 4:

1. The technical teacher should be current in his approach if he expects to prepare students properly (Disagree-level 1).
2. Yes (Agree-level 3).
3. Very few engineers in our area need the modern style curriculum as a background, at least at the present time (Agree-level 3).
4. That is exactly the difference between engineering technician and engineer (Agree-level 3).
5. Industrial experience should be essential (Agree-level 3).

6. Also much practical industrial experience in several related fields (Agree-level 2).
7. Plus he should be current in "state-of-the are" in his field (Agree-level 2).
8. He needs both - preference to the practical (Agree-level 2).
9. The objective of the technical institutes is to prepare the technician to work in his field, Not go into research or graduate school (Agree-level 2).

More than two thirds of the respondents agree with this statement. The comments indicate that the practical approach is far mor valuable than the theoretical engineering approach.

Statement 5

Teachers of the basic science courses (e.g. mathematics, physics, chemistry) should have acquired suitable industrial experience so that they can relate theoretical principles to practical situations.

Table 16

Responses to Statement 5

Number of responses 41

Precentage by level	2.4%	2.4%	2.4%	2.4%	37.5%	17%	37.5%
Response by level	1	1	1	1	15	7	15
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 5

1. This helps the teacher know what to teach (Agree-level 1).
2. Amen! (Agree-level 3).
3. On the job exposure to the technical instructor seems to be a suitable alternative (Level 0).
4. If not, too much irelevant material is introduced (Agree-level 3).
5. Appropriate communications with respective technology instructors will go a long way toward offsetting what might be loosely defined as lack of industrial or work experience (Agree-level 3).
6. But these people are most difficult to find (Agree-level 3).
7. This can be acquired thru other than industrial experience (Disagree-level 2).
8. Often our students feel that mathematics is a separate course just required by the school (Agree-level 3).
9. In-service program could provide this experience (Agree-level 1).
10. Ideally, yes---practically, few mathematicians and physicists have this type of experience. What they call "practical" experience is not what the engineer calls "practical" experience (Agree-level 1).
11. If these are available (Agree-level 3).
12. Not necessary. They should only be <u>good</u> teachers (Disagree-level 3).

The responses indicate a very strong agreement with this statement. Several suggestions were advanced, such as having a closer relationship with the technical teachers and in-service training programs. Another alternative would be to have the engineering technology teachers also teach the basic science courses.

Statement 6

Technical teachers should be able to apply algebra, trigonometry, and calculus in developing ideas which make use of scientific and engineering principles.

Table 17

Responses to Statement 6

Number of responses 41							
Percentage by level	2.4%	0%	0%	0%	11.9%	26.8%	58.5%
Response by level	1	0	0	0	5	11	24
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 6:

1. Not in architecture (Disgree-level 3).
2. Non-calculus oriented for 2-yr. Associate Degree and calculus definitely for 4-yr. Degree programs (Agree-level 3).
3. Agreement as to the teacher. The curriculum often cannot permit this fully (Agree-level 3).
4. In Eng. tech (Agree-level 3).
5. Only on a practical useful industrial level (Agree-level 3).
6. To be versed in their particular field the teachers would have to be versed in the basic sciences (Agree-level 3).
7. Or have used these certain principles (Agree-level 3).
8. This, to me is the difference between technical and vocational education (Agree-level 3).
9. I see no way for them to teach engineering technology if they don't (Agree-level 3).

Again there is a strong agreement with the statement. The use of calculus in two year programs is a point widely debated. The responses indicate that the engineering technologies surveyed by this report favor its use.

Statement 7

Graduates coming directly from colleges conferring the bachelor's degree in science (e.g. mathematics, physics, chemistry) do not qualify to teach technical subjects in engineering technologies due to lack of understanding and philosophy regarding the occupational environment of engineering technicians.

Table 18

Responses to Statement 7

Number of responses 41							
Percentage by level	4.8%	11.9%	2.4%	11.9%	21.9%	17%	29.2%
Response by level	2	5	1	5	9	7	12
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 7:

1. It depends. They may be limited by a lack of industrial experience but some individuals might be quite good technical teachers (Disagree-level 2).
2. My experience has been that these teachers, in many cases at this school, are quick to adapt to technical requirements (Agree-level 1).
3. Yes, otherwise they have no way of knowing what is expected of a technician - or what he needs to know (Agree-level 3).

4. To be versed in their particular field the teachers would have to be versed in the basic sciences (Agree-level 2).
5. Qualification is a relative term not a "go" or "no go" (Level 0).
6. There may be a few exceptions (Agree-level 1).
7. He may have technical education and/or experience (Agree-level 1).

Two thirds of the respondents agreed with this statement. The comments indicate that this agreement must be tempered with consideration of the individual. There may be something in his background that would place him out of the ordinary run of science graduates.

Statement 8

The basic sciences (e.g. mathematics, physics, chemistry, etc.) should be taught as pure sciences.

Table 19

Responses to Statement 8

Number of responses 41

Percentage by level	39%	34.1%	7.3%	7.3%	9.7%	2.4%	0%
Response by level	16	14	3	3	4	1	0
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 8:

1. No! Applied, for the students to realize their relative worth (Agree-level 1).
2. Not at Technical Institute (Disagree-level 2).

3. Never, for a Technical Institute (Disagree-level 3).
4. The "hands on" or application approach has been proven more successful (Disagree-level 2).
5. See McGraw Report (Disagree-level 3).
6. Some relation to the technical program should be demonstrable to the student for the sake of motivating him (Agree-level 1).
7. Not necessarily (Agree-level 1).
8. Should be taught as a pure science, but related to technical subject by use of examples in which the pure science is applicable to technical work (Agree-level 3).
9. Not in technology education (Disagree-level 2).
10. Abstract ideas are the very thing that hold back our normal student at the high school level. Teach on a practical, relevant to basic application level (Disagree-level 3).
11. Not to 2-yr technicians (Disagree-level 2).
12. Students we have had do not relate well to such teaching and tend to drop out (Disagree-level 1).
13. They should be related to technical area (Disagree-level 1).

Seventy-five percent of the respondents disagree with the statement. Comments 1, 6, 7, and 8 of the above section indicate that even though the respondents agreed with the statement they felt the necessity for some method of application.

Statement 9

Criteria for accepting and promoting technical teachers should take into account numerous considerations such as in-depth industrial experience, teaching experience, professional licenses, non-credit yet pertinent programs.

Table 20

Responses to Statement 9

Number of responses 41

Percentage by level	4.8%	0%	0%	2.4%	21.9%	14.6%	56.1%
Response by level	2	0	0	1	9	6	23
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 9:

1. These are good indicators but I feel that an engineering degree and desire to be a good teacher is more important (Disagree-level 3).
2. We must keep up with the arriving technical age (Agree-level 3).
3. Yes, these people are aware of the needs of the employer and what the student needs to know (Agree-level 3).
4. All activities should be relevant, or at least considered (Agree-level 3).
5. Definitely --- today too much emphasis is on degrees regardless (Agree-level 3).
6. Strictly on a basis of success in the classroom (Disagree-level 3).
7. All the factors of the total environment should be considered (Agree-level 2).

The respondents agree almost unanimously regarding Statement 9 that experience should definitely be a factor in accepting and promoting technical teachers.

Statement 10

Current graduates coming directly from engineering colleges do not qualify to teach technical subjects in engineering technologies due to lack of understanding and philosophy regarding the occupational environment of engineering technicians.

Table 21

Responses to Statement 10

Number of responses 41							
Percentage by level	7.3%	9.7%	2.4%	14.6%	26.8%	11.9%	26.8%
Response by level	3	4	1	6	11	5	11
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 10:

1. Some are highly competent. The institute itself is in a sense such an environment (Level 0).
2. Here again are exceptions (Agree-level 0).
3. Our experience, again, has been that engineering graduates quickly adapt to the students (Disagree-level 2).
4. Need at least three years of "hands on" experience (Agree-level 3).
5. To be versed in their particular field the teachers would have to be versed in the basic sciences (Agree-level 2).
6. Can use as part-time assistance (Agree-level 3).
7. I agree but not for your indicated reasons (Agree-level 3).
8. No reason to pre-suppose "lack of understanding and philosophy" (Disagree-level 2).

Again well over half of the respondents agree with this statement. There is a surprising number having no opinion one way or the other. However, it is obvious the majority do not feel that engineering graduates coming directly from school are qualified to teach in the Technical Institutes.

Statement 11

Since economists teach economics and engineers teach engineering, only those having training and experience as technicians should teach technical subjects in the engineering technologies.

Table 22

Responses to Statement 11

Number of responses 40

Percentage by level	40%	27.5%	2.5%	12.5%	12.5%	0%	7.5%
Response by level	16	11	1	5	5	0	3
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 11:

1. You assume the first part of your statement to be true but that is not necessarily so, ie. I am an Eng. teaching math (Disagree-level 2).
2. The teacher needs a deeper understanding than such training can give (Disagree-level 3).
3. Roles of engineer and the technician are on different planes (Disagree-level 2).
4. Don't understand (no response).

5. Ridiculous (Disagree-level 3).
6. To be a competent teacher one must have a depth of knowledge in the field greater than that he is expected to teach (Disagree-level 2).
7. They need to have at least supervised technicians (Level 0).
8. Ideally, I would prefer someone who has worked as a technician, then who has taken up engineering. But only someone with engineering education or experience can give students the proper background
9. Here again are exceptions---but it would be harder to find a qualified economist to teach a technical subject (Agree-level 1).
10. Experience can be highly relevant to the teacher's quality, work, and hobbys---etc. (Disagree-level 2).
11. If in architecture we refer to architectural designers and draftsmen (Disagree-level 3).

More than two thirds of the respondents disagreed with this statement, indicating they felt that technician level training alone was not enough to qualify a teacher of the engineering technologies. Some engineering training or strong industrial experience would be desired.

Statement 12

Current graduates coming directly from two-year engineering technology programs do not qualify to teach technical courses in engineering technologies.

Table 23

Responsed to Statement 12

Number of responses 41							
Percentage by level	2.4%	7.3%	21.9%	14.6%	9.7%	17%	26.8%
Response by level	1	3	9	6	4	7	11
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 12:

1. Have seen good work done by such a man (Level 0).
2. Maybe to a limited extent (Agree-level 3).
3. This depends entirely upon the individual and course concerned (Level 0).
4. Some are better qualified than most 4 yr. academic graduates without experience (Disagree-level 1).
5. Needs experience in the field (Agree-level 1).
6. They may be highly qualified or very poorly qualified or someplace between (Disagree-level 2).
7. Use only as helpers in labs (Agree-level 3).
8. Generally, yes (Agree-level 3).

Over half of the respondents agree that graduates coming from two-year engineering technology programs are not qualified to teach technical courses. Some of the comments indicate that very much depends on the individual and that to shut out all graduates of a two-year program would be a mistake.

Statement 13

Appropriate industrial employment should be considered desirable experience for personnel who teach non-technical courses in engineering technology programs.

Table 24

Responses to Statement 13

Number of responses 41							
Percentage by level	2.4%	4.8%	2.4%	7.3%	31.7%	41.4%	9.7%
Response by level	1	2	1	3	13	17	4
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 13:

1. It helps to have an "inside track" (Agree-level 1).
2. Some reservations exist (Agree-level 1).
3. Industrial Employment benefits any teacher in Technical Schools (Level 0).
4. Or for anyone else (Agree-level 2).
5. No! (Disagree-level 3).

Over eighty percent of the respondents agree that industrial employment should be considered desirable for personnel who teach non-technical courses in engineering technology programs.

Statement 14

Controlled industrial experience should be a part of a baccalaureate programs for technical teachers and the experience should be allotted substantial credit, for example 15 semester hours.

Table 25

Responses to Statement 14

Number of responses 41

Percentage by level	2.4%	7.3%	0%	14.6%	21.9%	19.5%	34.1%
Response by level	1	3	0	6	9	8	14
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 14:

1. Should be genuine industrial experience, not regulated by an educational institution (Agree-level 3).
2. Define controlled. Actually the experience should be in the complete engineering environment (Disagree-level 2).
3. This may be extremely difficult to operate and control (Agree-level 1).
4. I feel that educational institutions should recognize the educational value of industrial experience (Agree-level 3).
5. Industrial experience, if "controlled" would not be true industrial experience (Disagree -level 3).
6. Highly desirable (Agree-level 3).
7. Beautiful---if possible---works like practice teaching (Agree-level 2).
8. Every case should be evaluated on its own merits (Disagree-level 3).

9. It might help a little but I'm not sure (Level 0).

Approximately ninety percent of the respondents agree with this statement. The concern expressed by the comments was to what extent the "environment" would be controlled and what effect it would have on the experience.

Statement 15

Technical teachers should understand and be fluent in the use of mathematics through differential equations.

Table 26

Responses to Statement 15

Number of responses 41

Percentage by level	4.8%	0%	11.9%	11.9%	24.3%	19.5%	26.8%
Response by level	2	0	5	5	10	8	11
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 15:

1. Not necessarily in Architecture (Disagree-level 3).
2. And more so for Electronics, Electrical majors (Agree-level 1).
3. Only as needed in practical industrial experience (Agree-level 3).
4. An understanding of perhaps, but the "fluent" use is questionable. I cannot recall using D.E. in instruction here (Agree-level 1).
5. The future will require more mathematical training for electronic technicians (Agree-level 3).

6. Desirable for professional growth (Level 0).
7. Would not be necessary in all courses. Why not require a study of Law also (Disagree-level 1).
8. The more math, the better (Agree-level 1).
9. Yes (Agree-level 3).

Over two thirds of the respondents agreed that the instructors should be fluent in the use of differential equations. Several, however, pointed out that it would not be necessary in all areas nor in all courses.

Statement 16

Basic science courses in engineering technology programs (e.g. mathematics, physics, chemistry) should be taught as related subjects rather than as "pure" subjects.

Table 27

Responses to Statement 16

Number of responses 41							
Percentage by level	2.4%	0%	2.4%	0%	17%	34.1%	43.9%
Response by level	1	0	1	0	7	14	18
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 16:

1. Some degree of understanding can be developed in shorter time span (Agree-level 2).
2. So far as this is possible (Agree-level 1).
3. There is a tremendous need for 2 year technicians trained in these basic areas alone!! (Disagree-level 3).
4. Definitely (Agree-level 3).
5. Preferable---but its hard to get instructors in these courses to see that way (Agree-level 1).
6. Yes, even when chemistry is the major (Agree-level 2).

Over ninety percent of the respondents feel that the basic science courses should be taught as a related subject. The greatest problem in this area is to find science instructors who have the experience necessary to teach the subject in a related manner.

Statement 17

Technical teachers should return to industry for professional development rather than publish learned papers.

Table 28

Responses to Statement 17

Number of responses 40

Percentage by level	2.5%	2.5%	0%	17.5%	15%	10%	52.5%
Responses by level	1	1	0	7	6	4	21
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 17:

1. Neither may necessarily help (Level 0).
2. The individual situation should (Level 0).
3. Should do both (No response).
4. Either or both could be appropriate (Disagree-level 2).
5. May do both, Returning to industry for professional development is important, however (Level 0).
6. Learned papers nowadays are way up in the stratosphere (Agree-level 3).
7. Some research and writing is very helpful (Agree-level 2).
8. Too much emphasis today on publishing and getting advanced degrees, in fact, that is where teachers are spending time and thought---not on teaching (Agree-level 3).
9. They need to continue to find out what is going on in industry---New methods (Agree-level 3).
10. Do both with emphasis on _____(last word indecipherable) (Agree-level 1).

Over three fourths of the respondents agreed with this statement indicating the respondents value industrial experience far more than the publishing of papers. Some respondents indicated some combination of both would be helpful.

Statement 18

Professional rank for technical teachers should not relate in the conventional academic manner to the salary scale.

Table 29

Responses to Statement 18

Number of responses 39

Percentage by level	5.1%	7.6%	12.8%	41%	5.1%	7.6%	20.5%
Response by level	2	3	5	16	2	3	8
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 18:

1. What is "convential academic manner" ? (Level 0).
2. ? (No response).
3. Not clear what you mean by "conventional academic manner" (Level 0).
4. Yes, many times an experienced (industrially) B.S. is more valuable in a technical school than an academic PhD. (Agree-level 3).
5. I don't understand (Level 0).
6. No counter proposal (Level 0).
7. I don't know what you mean as only a max of 10% salary increase, annually, can be given regardless of rank promotion or salary scale. This is so in these days of annual cost of living increase in excess of 6% and wage increases of 15%, compounded (Level 0).
8. Question undefined (Level 0).
9. ? (Level 0).
10. Anyone who is worthy of the salary should be given the professional rank, regardless of his academic background. (Disagree-level 3).
11. But not to the extent it is currently being used for a lot of this professional rank is obtained by politics (Disagree-level 1).

The respondents are almost balanced with forty-one percent checking level zero. No significant conclusion can be drawn from the data collected.

Statement 19

Technical teachers who extend their industrial experience by temporarily returning to industry should be given credit for professional development just as they might for more formalized studies.

Table 30

Responses to Statement 19

Number of responses 41

Percentage by level	2.4%	0%	0%	0%	17%	31.7%	48.7%
Response by level	1	0	0	0	7	13	20
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 19:

1. If they are in fact developed (Agree-level 1).
2. If "extend" is the proper description of the experience. Not all such experiences are such (Agree-level 3).
3. Why? (Disagree-level 3).
4. Such programs can be weak or poor (Agree-level 2).
5. Providing they accomplish and don't just "return" (Agree-level 2).
6. A good balance between the two would be better (Agree-level 3).
7. Yes, Industry's needs are changing---This they need to experience (Agree-level 2).

Almost unanimously the respondents agreed that professional development credit be given teachers for temporarily returning to industry in order to gain industrial experience.

Statement 20

Salaries for technical teachers should not be governed by the same scales as for teachers of academic subjects but should vary according to background and area of specialization and be competitive with industrial incomes.

Table 31

Responses to Statement 20

Number of responses 39

Percentage by level	0%	0%	5.1%	7.6%	15.3%	20.5%	51.2%
Response by level	0	0	2	3	6	8	20
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 20:

1. Salaries for technical teachers should be governed by competitive industrial income if this is the higher of the two. Teachers of academic subjects should earn about the same as technical teachers in the same institution (Agree-level 2).
2. This is a leading question---I doubt if you can get objective answers (No response).
3. We should all be considered professionals (Disagree-level 1).
4. Competitiveness would enhance quality (Agree-level 2).

5. In-depth courses and experience are harder to obtain---this warrants better pay---but try to explain this to an administrator with a Doctor's degree in some easy course (Agree-level 3).
6. Reasons should be obvious (Agree-level 3).

Over eighty-five percent of the respondents agree that salaries for technical teachers should be governed by competitiveness with industry and not by the salary scales for academic teachers. Technical schools will find few with the proper qualifications if salaries are not competitive.

Statement 21

Current engineering curriculums are inadequate for developing technical teachers from the standpoint of the practical applications of engineering principles.

Table 32

Responses to Statement 21

Number of responses 38							
Percentage by level	5.2%	7.8%	7.8%	15.2%	15.2%	23.6%	23.6%
Response by level	2	3	3	6	6	9	9
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 21:

1. Cannot comment for lack of exposure to such curricular (No response).
2. That plus industrial experience and interest are adequate (Disagree-level 2).

3. Statement assumes all engr. Curricula (Disagree-level 2).
4. Not being an engineer I cannot comment. If engineering curricula follow the approach of scientific curricula I agree (No response).
5. Not right out of college but after 5 years experience, can do very well (Disagree-level 2).
6. Engineering curricula are designed for the future. Technical curricula should be designed for the present (Agree-level 2).
7. Revision and updating is badly needed (Disagree-level 1).
8. From what I've read they are constantly doing a better job (Agree-level 1).

Over fifty percent of the respondents agreed that current engineering graduates are not qualified as technical teachers from the standpoint of practical applications of engineering principles.

Statement 22

Curricula for developing technical teachers should be administered by colleges of engineering and draw those who must teach the education subjects from the colleges of education.

Table 33

Responses to Statement 22

Number of responses 40

Percentage by level	25%	10%	2.5%	20%	22.5%	12.5%	7.5%
Response by level	10	4	1	8	9	5	3
Level on Questionnaire	3	2	1	0	1	2	3
	Disagree					Agree	

Comments By Respondents With Regard To Statement 22:

1. Technical teachers should have some educational subjects, and it would benefit the teachers of educational subjects in a technical institute to have some technical training (Level 0).
2. Not necessarily (No response).
3. Colleges of Emgineering should include in their curricula the desired number of education courses as needed for teacher certification (Disagree-level 3).
4. Technical subjects embrace other fields than engineering---the major field of the subject should determin the curriculum (Disagree-level 3).
5. Silly (Disagree-level 3).
6. Bull! (Disagree-level 3).
7. Reason stated previously (Disagree-level 3).
8. Here is where I get blasted---Very few in education have enough depth to carry a mild discussion---But engineering colleges need to do some house cleaning--- a compromise would be preferable (Disagree-level 3).
9. This might help, but neither develops the perfect teacher----a combination would help (Disagree-level 2).

The percentages indicate no significant agreement or disagreement.

Statement 23

Curricula for developing technical teachers should be administered by colleges of education and draw those who must teach the engineering subjects from the colleges of engineering.

Table 34

Responses to Statement 23

Number of responses 41

Percentage by level	39%	21.9%	11.9%	19.5%	2.4%	2.4%	0%
Response by level	16	9	5	8	1	1	0
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 23:

1. That would be like a dentist telling a brain surgeon how to perform an operation (Disagree-level 3).
2. Administered by industry and train teachers in education plus engineering skills (Disagree-level 3).
3. No opinion (Level 0).
4. Colleges of Engineering should include in their curricula the desired number of education courses as needed for teacher certification (Disagree-level 3).
5. Bull! (Disagree-level 3).
6. Colleges of education for administration is not the answer--- that is what started our mess in education (Disagree-level 3).
7. Technical subjects embrace other fields than engineering---the major field of the subject should determine the curriculum (Disagree-level 3).
8. If "may" had been used instead of 'should'. I would agree (Disagree-level 2).
9. Is this possible (Level 0).

Over two thirds of the respondents disagree that schools for technical teachers should be administered by colleges of education.

Statement 24

Only about ten percent of the technical and professional course work in industrial arts or trade and industrial education degree programs is directly applicable to the needs of technical teachers.

Table 35

Responses to Statement 24

Number of responses 37

Percentage by level	5.4%	5.4%	0%	48.6%	10.8%	16.1%	13.5%
Response by level	2	2	0	18	4	6	5
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 24:

1. I don't know re: idn. arts or trade programs (No response).
2. No Comment---don't know (No response).
3. Don't know (Level 0).
4. Cannot comment (No response).
5. Even less useful (Agree-level 3).
6. If technical standards are to be preserved (Agree-level 3).
7. No familiarity with courses mentioned (Level 0).
8. Schools in this shape better "shape-up" (Agree-level 2).
9. Their "hands on" experience is valuable (Agree-level 2).

Almost fifty percent of the respondents checked Level 0 to this

statement. Many of the comments indicated a lack of knowledge of the programs mentioned. However, forty percent did agree with the statement. There is insufficient data available to draw any meaningful conclusion to this statement.

Statement 25

Opportunities for academic exchanges of technical teachers should be developed between various two-year institutes.

Table 36

Responses to Statement 25

Number of responses 41

Percentage by level	19.5%	2.4%	2.4%	21.9%	9.7%	26.8%	17%
Response by level	8	1	1	9	4	11	7
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 25:

1. For what purpose? (Disagree-level 3).
2. Too much hardship on the teacher (Disagree-level 3).
3. Heartily, I approve! (Agree-level 3).
4. To what purpose? (Disagree-level 1).
5. Probably a better way of communication for problem areas. A different approach than the current use of conventions ! (Agree-level 3).
6. Who's going to pay the expenses (Disagree-level 3).
7. I see nothing to be gained (Disagree-level 3).

8. Provided the economic impact of relocation is provided for (Agree-level 2).
9. Very good to give varied teaching experience (Agree-level 2).

Over half the respondents agree that an academic exchange program between two-year institutes would benefit the teachers. Some respondents were concerned with the financial aspects of such a relocation.

Statement 26

Opportunities for academic-year exchanges should be developed between technical teachers and qualified technical personnel from industry.

Table 37

Responses to Statement 26

Number of responses 41

Percentage by level	0%	0%	0%	11.9%	14.6%	46.3%	26.8%
Response by level	0	0	0	5	6	19	11
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 26:

1. This is a great idea! (Agree-level 3).
2. Excellent idea (Agree-level 3).
3. Provided the economic impact of relocation is provided for (Agree-level 2).
4. Can be valuable to both (Agree-level 2).

Over eighty percent of the respondents favor an exchange program with industry. Approximately twelve percent checked level 0 and there were no respondents disagreeing.

Statement 27

A new bachelor's degree having a major in a variety of technologies, specifically tailored to the need of technical teachers and designed to equitably transfer those holding associate degrees, should be implemented in the State of Tennessee as soon as possible.

Table 38

Responses to Statement 27

Number of responses 41

Percentage by level	9.7%	4.8%	7.3%	21.9%	14.6%	19.5%	21.9%
Response by level	4	2	3	9	6	8	9
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree			Agree		

Comments By Respondents With Regard To Statement 27:

1. No---can't do a good job if not trained in a specific field (Disagree-level 2).
2. Too many different degrees already---its getting to be a joke (Disagree-level 3).
3. We need productive workers more than a program like this. Tech. teachers are already available (Disagree-level 2).
4. Yes, associate degree holders sometimes lose ½ of their credit

in transfer to 4 yr. college (Agree-level 3).

5. A General Engineering Degree perhaps (Level 0).
6. And to provide A.S. Degree holders to do the same in their specific areas (Agree-level 3).

Slightly more than half of the respondents agreed that a program specifically tailored to the needs of technical teachers should be implemented in the State of Tennessee as soon as possible.

Statement 28

A new master's degree in technologies designed to meet the subject matter competency needs of technical teachers having degrees in fields other than engineering should be implemented in the State of Tennessee as soon as possible.

Table 39

Responses to Statement 28

Number of responses 40

Percentage by level	10%	7.5%	5%	27.5%	12.5%	22.5%	15%
Response by level	4	3	2	11	5	9	6
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 28:

1. Are all technologies to be engineering oriented? Our institute is in not so arranged!!! We have scientific business and computer oriented technologies (No response).

2. Background inadequate for technical education (Disagree-level 2).
3. Too many different degrees already---its getting to be a joke (Disagree-level 3).
4. Advanced degrees should be in the professions (Disagree-level 2).
5. Not as much help as 24 (Agree-level 1).

Again the responses indicated agreement that a new master's program be initiated to meet the needs of technical teachers having degrees in fields other than engineering.

Statement 29

A new flexible doctoral program meeting the needs of technical teachers should be implemented in the State of Tennessee.

Table 40

Responses to Statement 29

Number of responses 40

Percentage by level	15%	10%	7.5%	27.5%	15%	10%	15%
Response by level	6	4	3	11	6	4	6
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 29:

1. With much emphasis on meeting need (Agree-level 3).
2. Doctoral candidates tend to get lost in their own interests rather than tending to teaching duties (Disagree-level 2).
3. Use what you have, use P.E.'s (Disagree-level 3).

4. Too many different degrees already---it's getting to be a joke (Disagree-level 3).
5. Enough opportunities are available already (Disagree-level 3).
6. Doctors degrees not needed in 2 yr. technical schools (Disagree-level 1).

With a large number of respondents expressing level 0 there is insufficient data to make any meaningful judgments, but, of those others there is a trend toward agreement.

Statement 30

Special summer institutes devoted to pedagogic needs of technical techers should be implemented in the State of Tennessee as soon as possible.

Table 41

Responses to Statement 30

Number of responses 41

Percentage by level	2.4%	0%	0%	31.7%	21.9%	24.3%	19.5%
Response by level	1	0	0	13	9	10	8
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 30:

1. Only if advanced credit towards M.S. and PhD. is concerned (Level 0).
2. This is Tennessee's greatest weakness. NSF and others are developing such programs, but they are scarce (Agree-level 3).

3. A special effort should be made to maintain a freedon of choice for the individual in furthering his education. I am afraid that the summer institute idea would result in too much regimentation of the teachers involved (Level 0).
4. Technical teachers reoriented from industry, as I was, need such courses (Agree-level 3).
5. When needed and to an advantage yes---but a program just to keep involved because it looks good on paper---No (Agree-level 1).
6. Having a summer quarter does not leave enough time for vacation, a very necessary change of pace, as it is (Disagree-level 3).
7. More "book learning" is always needed, but better to alternate each year with industrial experience (Agree-level 2).

Approximately two thirds of the respondents favor such a proposal. Thirty-one percent remained neutral with two point four percent being against the proposal.

Statement 31

Persons studying to be technical teachers should, in the advanced stages to their preparation, serve an internship in which they would study and teach under the guidance of experienced personnel.

Table 42

Responses to Statement 31

Number of responses 38							
Percentage by level	5.2%	0%	5.2%	13.1%	31.1%	18.4%	26.4%
Response by level	2	0	2	5	12	7	10
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 31:

1. Practice teaching at a Technical Institute (No response).
2. Not necessarily (No response).
3. Good (Agree-level 3).
4. Only if they have not been involved in a directed student teaching program previously (Agree-level 3).
5. Careful! Such internship should consider the opportunity. Many fail for lack of teaching experience (Agree-level 3).
6. We are hung-up on square filling now (Disagree-level 3).
7. Would help in acquainting them with how the practical side is taught (Agree-level 2).
8. Better to go to work for 5 years (Disagree-level 1).

Over seventy-five percent of the respondents favored a teaching internship in the advanced stages of a technical teacher training program.

Statement 32

All teaching personnel, however remotely involved in engineering technology curricula, should be exposed to the philosophy and objectives of engineering technology education.

Table 43

Responses to Statement 32

Number of responses 40

Percentage by level	10%	0%	2.5%	5%	30%	17.5%	35%
Response by level	4	0	1	2	12	7	14
Level on Questionnaire	3	2	1	0	1	2	3
		Disagree				Agree	

Comments By Respondents With Regard To Statement 32:

1. Especially high-school teachers and advisors (Agree-level 3).
2. Public school teachers are not aware of the caliber of engineering technology (Agree-level 1).
3. And technical personnel to the overall philosophy of the arts and sciences (Agree-level 2).
4. It is rather difficult to equate college level engineering technology programs to other technical programs, likewise difficult to relate the qualifications required to teaching personnel and their educational backgrounds (Disagree-level 3).
5. By all means---how can the blind lead the blind! (Agree-level 3).
6. Teachers of voice have no need for this type of exposure (Disagree-level 3).
7. Yes, but how to do this is a problem. We in the technologies try to acquaint the "related" teachers with the type of reports needed in their "Report Writing" classes and the type of problems that apply in the physics and math work. This helps in some respect to keep the work on the practical side (Agree-level 1).
8. Can get a very good education by working out in the real world (Agree-level 1).
9. Question: Do the philosophies and objectives of "engineering" technology education differ from the philosophies of other types of technology education? At Chattanooga State Technical Institute we are concerned with training people who:
   (1) Are capable of assuming the tasks assigned to them with a minimum of on the job orientation.
   (2) Have an attitude of "do the job thoroughly and now."

(3) Have an attitude oriented toward work rather than dreaming of application of principles whether they be business, engineering or scientific (Disagree-level 3).

Over eighty percent of the respondents agree that all teaching personnel should be exposed to the philosophies and objectives of engineering technology education.

SUMMARY

The purpose of this study was to determine the qualifications of engineering technology teachers in the State Technical Institutes of Tennessee. It was felt that the teachers now teaching in the Technical Institutes would be the best source of information.

A questionnaire was designed and mailed to forty-six engineering technology teachers in the three State Technical Institutes of Tennessee. Forty-one of the teachers responded. The questionnaire was designed to accomplish four things: (1) To establish the academic background of the teachers prior to accepting employment as technical teachers, (2) To determine what degrees were being obtained and what specialized courses were being taken, (3) To determine (from a check-list) the number of teachers spending substantial amounts of time on various educational tasks, and (4) To obtain a consensus of opinion on various statements concerning the teaching of technical courses and the preparation of technical teachers in the State of Tennessee.

The first section of the questionnaire revealed the most popular degree held prior to teaching was the B.S. in Engineering (56%) followed by the M.S. in Engineering (29%). The next most popular was the B.S. in science (24%) and the M.S. in Science (14%).

Of the degrees most of the teachers would have liked to have had,

the most popular was the B.S. in Engineering (61%) followed by the M.S. in Engineering (65%). Worthy of note was the M.S. in Technical Education desired by twenty-six percent. Professional Engineering licenses were held by fifty-one percent of the teachers.

In the second section of the questionnaire it was found that only three of the forty-one respondents were working on an Engineering degree while six were working on degrees in Education. In the area of courses taken it was found that more educational subjects were being studied than engineering.

The third section of the questionnaire was designed to determine the number of teachers spending substantial amounts of time on various teaching tasks. The conclusions were to lead toward recommendations concerning the addition to or the elimination of course materials from teacher preparation programs. The responses in this area of the questionnaire were unsatisfactory and no significant conclusions could be drawn.

In the fourth section of the questionnaire it was found that the technical teachers place a great value on industrial experience. The respondents agree current graduates of Engineering schools or schools of vocational or industrial education did not qualify as technical teachers. This is a general statement and recognizes that there will be exceptional individuals who will qualify. Such a value was placed on industrial experience that it was felt that even the teachers of related subjects should have such experience in order to avoid teaching "pure" science courses but instead teach in a "related" manner. Most felt that current engineering curriculums were inadequate for developing technical teachers and that a new program at both the bachelor's and master's level to develop such

teachers be initiated as soon as possible. This program should not be administered by colleges of education and should include at an advanced stage a teaching "internship" program at some technical institute. At the B.S. level some form of controlled industrial experience should be provided.

It was agreed that the teachers should be competent in the use of algebra, trigonometry, calculus, and differential equations and that they should be versatile enough to teach the basic science courses as well as their specialties.

In addition the teachers felt that experience should be a factor in accepting and promoting technical teachers and that they should return to industry for professional development rather than publish learned papers. According to the respondents credit should be given for professional development when a teacher returns to industry for a summer term. The salaries for technical teachers should be competitive with industry and not be based on academic scales.

It was agreed that summer institutes be encouraged and that academic exchanges between schools and exchanges between schools and industry be developed in Tennessee as soon as possible.

The teachers were almost unanimous in their opinion that all teaching personnel, no matter the position held, should be thoroughly familiar with the philosophies and objectives of technical education.

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APPENDIX A

Part A - Please place an (X) in column "Part A" opposite the number(s) to describe the completed preparation you would like to have if you were starting today.

Part A	No.	
_____	1.	_____ High School Graduate
_____	2.	_____ Two year engineering diploma or certificate
_____	3.	_____ Associate in Arts
_____	4.	_____ Associate in Science
_____	5.	_____ BS in Vocational Education
_____	6.	_____ BS in Technical Education
_____	7.	_____ BS in Engineering
_____	8.	_____ BS in a science field (Math, Physics, Chem. etc.)
_____	9.	_____ BS in Technology
_____	10.	_____ BS in Secondary Education
_____	11.	_____ BS in Industrial Education
_____	12.	_____ MS in Vocational Education
_____	13.	_____ MS in Engineering
_____	14.	_____ MS in a science field (Math, Physics, Chem. etc.)
_____	15.	_____ MS in Education
_____	16.	_____ MS in Technical Education
_____	17.	_____ MS in Industrial Education
_____	18.	_____ Education Specialist (Masters & 45 Hours)
_____	19.	_____ Doctorate
_____	20.	_____ Registered Professional Engineer

Part C - Directions: Please indicate the number of years experience in the blank provided opposite the appropriate number(s).

	No. Years
1. In depth related work experience	_____
2. High school teaching experience	_____
3. Four year college teaching experience	_____
4. Military technical teaching experience	_____
5. Military related work experience	_____

Part D -

1. Professional Licenses held _____

_____

_____

2. Other preparation (please describe,. _____

_____

_____

3. What subject area do you now teach? _____

1.	[illegible]	[illegible]	[illegible]	Effect on Teaching		
				Excel.	Good	Poor
2.	[illegible]	Total Hrs. Earned	College or University	Effect on Teaching		
				Excel.	Good	Poor
3.	Vocational subjects studied since entering technical education.	Total Hrs. Earned	College or University	Effect on Teaching		
				Excel.	Good	Poor
4.	Science subjects studied since entering technical education.	Total Hrs. Earned	College or University	Effect on Teaching		
				Excel.	Good	Poor
5.	Related industrial experience since entering technical teaching. Please describe.	No. of Months	Company	Effect on Teaching		
				Excel.	Good	Poor
6.	Others, such as professional licenses, special courses, etc., since entering technical education.	Location		Effect on Teaching		
				Excel.	Good	Poor

1.	[illegible]	_____
2.	Preparing laboratory experiments.	_____
3.	Review and evaluate instructional materials, texts and reference materials for potential use.	_____
4.	Maintenance of student records.	_____
5.	Maintenance of equipment.	_____
6.	Inventory course supplies and materials.	_____
7.	Preparation of requests for supplies and equipment.	_____
8.	Preparation and monitoring of safety programs.	_____
9.	Preparation of lecture and laboratory presentations.	_____
10.	Preparation and grading of homework.	_____
11.	Participations in meetings and conferences.	_____
12.	Participation in tours and orientations.	_____
13.	Selections and preparations of audio visual equipments.	_____
14.	Develop and set up exhibits and displays.	_____
15.	Conduct field trips.	_____
16.	Preparation of instructional materials (information sheets, handouts, etc.)	_____
17.	Formulate objectives and select instructional content for a course.	_____
19.	Organization of advisor committees.	_____

12. [illegible] _____

23. [illegible] _____

21. [illegible] Educational Journal. _____

22. Maintain knowledge of theory in own discipline within the school. _____

23. Participate in a number of professional organizations. _____

24. Maintain or improve technical competence in area of specialty. _____

25. Participate in registration procedures. _____

26. Participate in in-service training programs. _____

27. Participate in or conduct research studies. _____

28. Perform consultant services to schools and professional educational organizations. _____

29. Perform technical writing. _____

30. Pursue advanced degree program. _____

31. Assist students in planning their educational programs. _____

32. Assist students with academic problems. _____

33. Assist students with job related problems. _____

34. Assist students with non-academic, personal and social problems. _____

35. Brief potential students of the schools' programs. _____

36. Confer with guidance counselors. _____

37. Counsel students into appropriate programs of study. _____

38. Participate in non-instructional school duties (e.g.: library selection and supervising student events). _____

1. [illegible] 3 2 1 0 1 2 3
Disagree Agree

2. Technical teachers should teach only those courses for which they have had rigorous industrial experience. 3 2 1 0 1 2 3
Disagree Agree
Comments:

3. Graduates coming directly from colleges of vocational and/or industrial education do not qualify from the standpoint of subject matter competency to teach technical courses in engineering technologies. 3 2 1 0 1 2 3
Disagree Agree
Comments:

4. Ideally, the technical teacher should have a depth of mastery in his technical field of a type and level roughly equal to that of a more practical undergraduate engineering curriculum which preceded the abstract, highly theoretical engineering curricula so prevalent today. 3 2 1 0 1 2 3
Disagree Agree
Comments:

5. Teachers of the basic science courses (e.g. mathematics, physics, chemistry) should have acquired suitable industrial experience so that they can relate theoretical principles to practical situations. 3 2 1 0 1 2 3
Disagree Agree
Comments:

7. [illegible] graduates [illegible] college [illegible] Bachelor's degree in science (e.g. mathematics, physics, chemistry) do not qualify to teach technical subjects in engineering technologies due to lack of understanding and philosophy regarding the occupational environment of engineering technicians.
Comments:

3 2 1 0 1 2 3
Disagree Agree

8. The basic sciences (e. g. mathematics, physics, chemistry, etc.) should be taught as pure sciences.
Comments:

3 2 1 0 1 2 3
Disagree Agree

9. Criteria for accepting and promoting technical teachers should take into account numerous considerations such as in-depth industrial experience, teaching experience, professional licences, non-credit yet pertinent programs.
Comments:

3 2 1 0 1 2 3
Disagree Agree

10. Current graduates coming directly from engineering colleges do not qualify to teach technical subjects in engineering technologies due to lack of understanding and philosophy regarding the occupational environment of engineering technicians.
Comments:

3 2 1 0 1 2 3
Disagree Agree

11. Since economists teach economics and engineers teach engineering, only those having training and experience as technicians should teach technical subjects in the engineering technologies.
Comments:

3 2 1 0 1 2 3
Disagree Agree

13. [illegible] 3 2 1 0 1 2 3
Disagree Agree
Comments:

14. Credit for industrial experience should be [illegible] 3 2 1 0 1 2 3
Disagree Agree
Comments:

15. Technical teachers should understand and be fluent in the use of mathematics through differential equations. 3 2 1 0 1 2 3
Disagree Agree
Comments:

16. Basic science courses in engineering technology programs (e.g. mathematics, physics, chemistry) should be taught as related subjects rather than as "pure" subjects. 3 2 1 0 1 2 3
Disagree Agree
Comments:

17. Technical teachers should return to industry for professional development rather than publish learned papers. 3 2 1 0 1 2 3
Disagree Agree
Comments:

18. [illegible] 3 2 1 0 1 2 3
Disagree Agree
Comments:

[illegible] 3 2 1 0 1 2 3
[illegible] Disagree Agree
Comments:

20. [illegible] should not be governed by the same methods as for teachers of academic subjects who should very carefully, to background and area of specialization, and be competitive with industrial income. 3 2 1 0 1 2 3 Disagree Agree
Comments:

21. Current engineering curriculums are inadequate for developing technical teachers from the standpoint of the practical applications of engineering principles. 3 2 1 0 1 2 3 Disagree Agree
Comments:

22. Curricula for developing technical teachers should be administered by colleges of engineering and draw those who must teach the education subjects from the colleges of education. 3 2 1 0 1 2 3 Disagree Agree
Comments:

23. Curricula for developing technical teachers should be administered by colleges of education and draw those who must teach the engineering subjects from the colleges of engineering. 3 2 1 0 1 2 3 Disagree Agree
Comments:

24. Only about ten percent of the technical and professional course work in industrial arts or trade and industrial education degree programs is directly applicable to the needs of technical teachers. 3 2 1 0 1 2 3 Disagree Agree
Comments:

26. [illegible] 3 2 1 0 1 2 3
Disagree Agree
Comments:

27. A [illegible] degree, having a major in a [illegible] technology, especially tailored to the needs of technical teachers and designed to rapidly transfer those holding associate degrees, should be implemented in the State of Tennessee as soon as possible. 3 2 1 0 1 2 3
Disagree Agree
Comments:

28. A [illegible] degree in technologies designed to meet the subject matter [illegible] needs of technical teachers having degrees in fields other than engineering should be implemented in the State of Tennessee as soon as possible. 3 2 1 0 1 2 3
Disagree Agree
Comments:

29. A [illegible] flexible doctoral program meeting the needs of technical teachers should be implemented in the State of Tennessee 3 2 1 0 1 2 3
Disagree Agree
Comments:

30. Special summer institutes devoted to pedagogic needs of technical teachers should be implemented in the State of Tennessee as soon as possible. 3 2 1 0 1 2 3
Disagree Agree
Comments:

32. [illegible]

3 2 1 0 1 2 3
disagree agree

APPENDIX B

APPENDIX B

PARTICIPATING INSTITUTES

1. Chattanooga State Technical Institute
   4501 Amnicola Highway
   Chattanooga, Tennessee 37406

2. Nashville State Technical Institute
   120 White Bridge Road
   Nashville, Tennessee 37209

3. State Technical Institute at Memphis
   5983 Macon Cove
   Memphis, Tennessee 38128

APPENDIX C

APPENDIX C

DEGREES HELD PRIOR TO TEACHING

Degrees	No. Held
High School Graduates	31
Associate in Arts	1
B.S. Engineering	23
B.S. Science	10
B.S. Technology	2
B.S. Secondary Ed	1
B.S. Industrial Ed	1
M.S. Vocational Ed	1
M.S. Engineering	12
M.S. Science	6
M.S. Education	3
M.S. Tech Ed	1
M.S. Ind. Ed	1
Education Specialist	1
Doctorate	1
Registered P.E	11

VT 019 324

VT 019 324
BRYANT, ANXIOUS E.
CONTENT FOR A TOOL DESIGN COURSE AS RECOMMENDED BY MEMPHIS AREA INDUSTRIES.

MF AVAILABLE IN VT-ERIC SET.
PUB DATE - . AUG70 29P. M.S. THESIS, MEMPHIS STATE UNIVERSITY, TENNESSEE

DESCRIPTORS - MASTERS THESES; *CURRICULUM RESEARCH; CURRICULUM DEVELOPMENT; CURRICULUM PLANNING; *TECHNICAL EDUCATION; *COURSE CONTENT; RELEVANCE (EDUCATION); *DESIGN; *HAND TOOLS
IDENTIFIERS - MEMPHIS AREA INDUSTRIES

ABSTRACT - IN ORDER TO FORMULATE RECOMMENDATIONS FOR A REVISED CURRICULUM IN TOOL DESIGN AS TAUGHT AT MEMPHIS STATE UNIVERSITY, A SURVEY WAS MADE OF 15 SELECTED INDUSTRIES IN THE STATE, FIVE OF WHICH WERE CHOSEN FOR THEIR REPRESENTATIVENESS IN TYPES OF TOOL DESIGN POSITIONS TYPICAL OF THE OCCUPATION. QUESTIONNAIRES WERE USED TO OBTAIN DATA AND A GRAPHICAL ANALYSIS WAS MADE OF FINDINGS. A STUDY OF THE FINDINGS RESULTED IN THE FOLLOWING RECOMMENDATIONS: (1) EMPHASIS SHOULD BE PLACED ON ASSEMBLY DRAWINGS, DETAIL DRAWINGS, MANUFACTURING PROCESSES, PROPERTIES OF MATERIALS, TOLERANCE, PUNCH AND DIE DESIGN, AND RELATED MATERIALS, AND (2) CONSIDERATION SHOULD BE GIVEN TO THE INCLUSION OF SHOP PROCEDURE, HEAT TREATMENT OF STEELS, FLUID MECHANICS, MECHANICS OF MACHINERY, AND ELECTRICAL DISCHARGE MACHINERY. (AUTHOR/SN)

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Content For A Tool Design Course As Recommended By Memphis Area Industries

by

Anxious E. Bryant

A Research Report Submitted in Partial Fulfillment
of the Requirements for the Degree
of
Master of Science
in Technical Education

Approved:

Kenneth D. Gremer
Major Professor

Committee Member

Committee Member

Head of Department

MEMPHIS STATE UNIVERSITY
MEMPHIS, TENNESSEE

August 1970

VT019024

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INTRODUCTION

Tool design is considered a part of tool engineering or production engineering. The term has become recognized as meaning the design of special tools for the economical production of large quantities of machine or instrument parts. To understand tool design in modern industry a few aspects of the manufacturing process must be considered.

Regardless of where a product is going to be used, those directly concerned with its manufacture must consider a product of the highest quality and the lowest possible production. The selling cost will depend on many factors. Some factors are not the direct concern of the tool designer, whereas other factors are of great concern. Factors such as design of a project, manufacturing methods, and choice of raw materials are shared with the tool designer and other members of the organization. (Donaldson, 1957, p. 1)

The tool designer has the responsibility of assuring that a product will be manufactured to acceptable quality standards. He must devise methods that will maintain quality at the lowest possible selling costs. (Jeffries, 1955, p. 1)

The U.S. Office of Education has outlined a two year program for tool design in their Technical Education Program Series. The program consists of designing and laying out cutting tools, gauges, simple jigs, fixtures, and dies. In addition, the curriculum consists of general education courses that are essential for our social order. (U. S.

Department of Health, Education, and Welfare, 1962, p. 31)

This study has been undertaken as an aid in the development of the four year drafting and design technology program at Memphis State University with regard to tool design course content.

PROBLEM STATEMENT

The task of this study was to formulate recommendations for a revised curriculum in tool design as taught at Memphis State University.

OBJECTIVES

The specific objectives of this study were as follows:

1. To develop an instrument for the purpose of surveying selected tool designers of Memphis industries.
2. To review literature with regard to tool design course content.
3. To develop graphs for the purpose of reporting data.

METHOD

From the review of literature a questionnaire was designed to obtain opinions of samples concerning needed content in tool design courses. The questionnaire was developed basically from drafting text content. (American Society of Tool and Manufacturing Engineers, Fundamentals of Tool Design, Prentice-Hall, Inc., Englewood Cliffs, N.J., 1962 and C. Donaldson and G. H. LeCain, Tool Design, McGraw-Hill, New York, 1957.) A survey was made of fifteen selected industries in Memphis. Five of these industries were selected by the researcher because he regards them as being representative of having the types of tool design positions typical of this occupation. The five industries were Dover Elevator, International Harvester, Chicago Bridge and Iron, North American

Rockwell, Inc., and Memphis Light, Gas, and Water Division. The remaining ten industries were randomly selected from those that have tool designers in their employment.

During a personal interview, a tool designer or a person familiar with this occupation employed by each of the fifteen industries was asked to fill out the questionnaire. A graphical analysis was made on the data gathered from the questionnaire and recommendations were made with regard to course content and its emphasis in tool design curriculums.

FINDINGS

BLUFF CITY MACHINE WORKS

Bluff City Machine Works is a machine shop that specializes in general machine work, jigs, fixture and die design, stamping and general machine shop work. The company also engages in welding and fabricating. The representative suggested standard parts, manufacturing processes, tolerances, properties of materials, cutting tools and mathematics as most important. The other areas involved were not of particular significance. Figure (1-1) indicates the degree of importance of each area.

BOWMAN-EVERETT AND ASSOCIATES

Bowman-Everett and Associates are design engineers. They employ a large number of draftsmen and engineers, and have a technical training program set-up for their employees that have an insufficient background in the area that they were employed.

The representative expressed great concern for this type of research, and indicated tremendous interest in the outcome of the study.

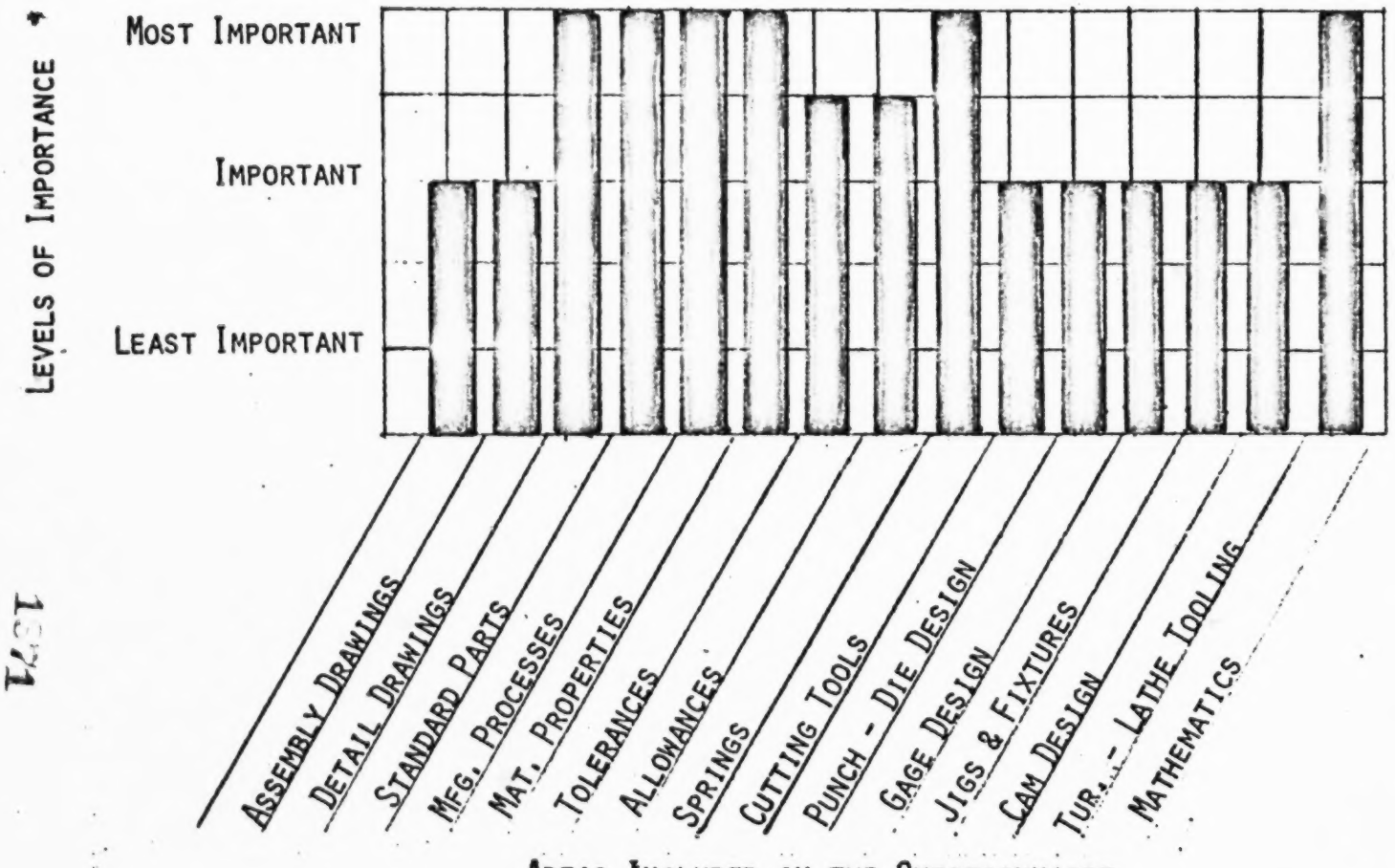


FIGURE 1-1 RESPONSES ACCORDING TO LEVELS OF IMPORTANCE BY INDUSTRY (Bluff City Machine Works)

Here it was pointed out that there is a great need for more highly technical courses, and much needed shop or laboratory practice. It was also pointed out that too many college graduates start to work with such limited knowledge of the field. They expressed willingness to give further assistance if needed in formulating course content. They also indicated a definite need for emphasis on heat treatment of steels, fluid mechanics and sketching. See Figure (1-2).

BUCKEYE CELLULOSE CORPORATION

This industry produces raw materials such as rubber, cellophane, acetate, and polyethylene. They have a mechanical engineer department that designs, redesigns and directs the maintenance of machinery and equipment used to produce their product.

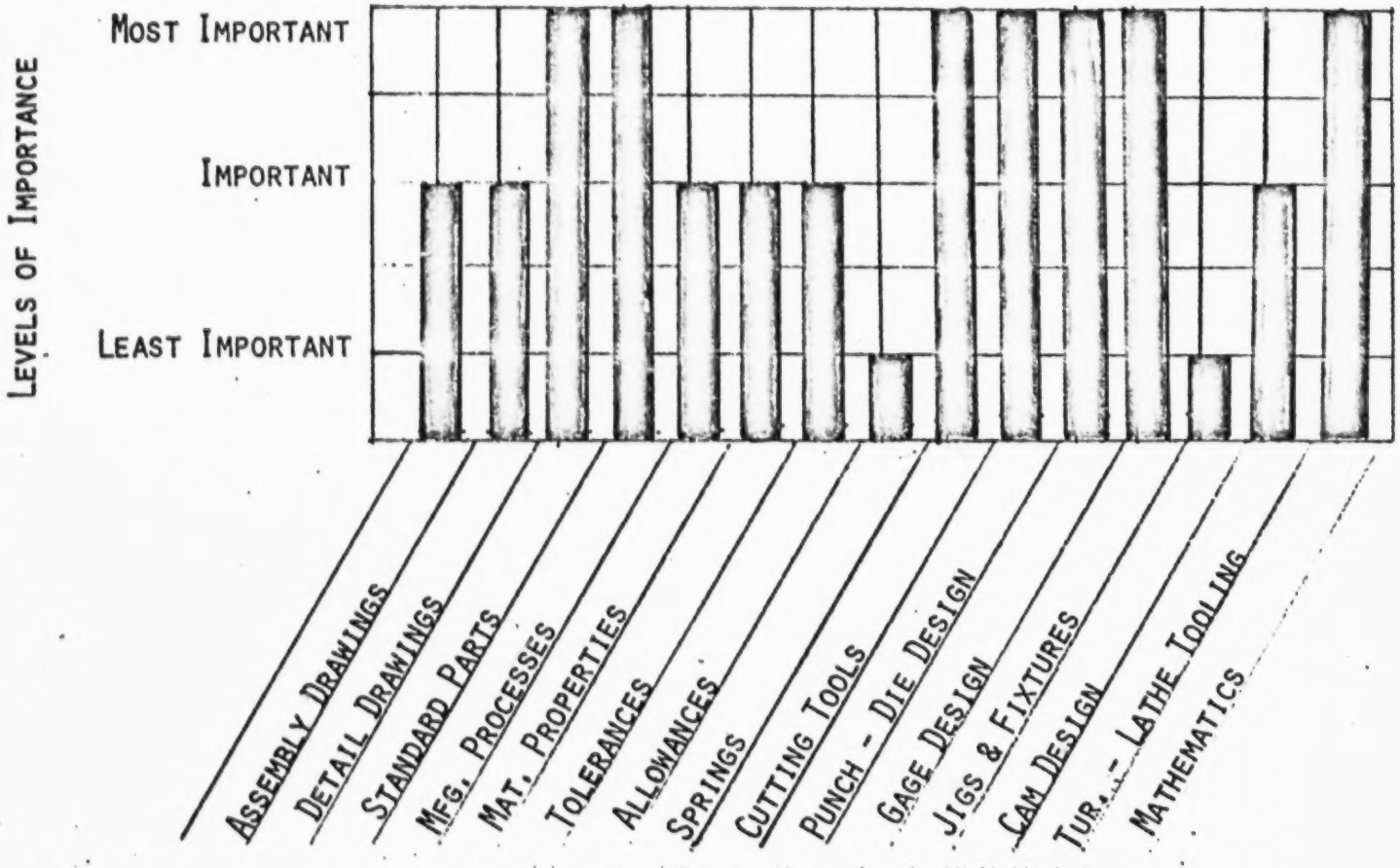
They expressed a strong need for assembly drawings, detail drawings, properties of materials, standard machine and tool parts, and mathematics. Little interest was indicated in other areas in question. See Figure (1-3).

CHICAGO BRIDGE AND IRON PRODUCTION PLANT

Chicago Bridge and Iron Production Plant builds heavy equipment such as cranes, barges, and storage vats for chemicals. The representative expressed great interest in this type of study. It was suggested that emphasis be placed on drawing room problems and mechanics of machinery. See Figure (1-4).

CHICAGO BRIDGE AND IRON ENGINEERING DEPARTMENT

Chicago Bridge and Iron Engineering Department designs equipment for all their production plants throughout the United States and



Areas Included in the Questionnaire

Figure 1-2 Responses According to Levels of Importance By Industry (Bowman-Everett and Associates)

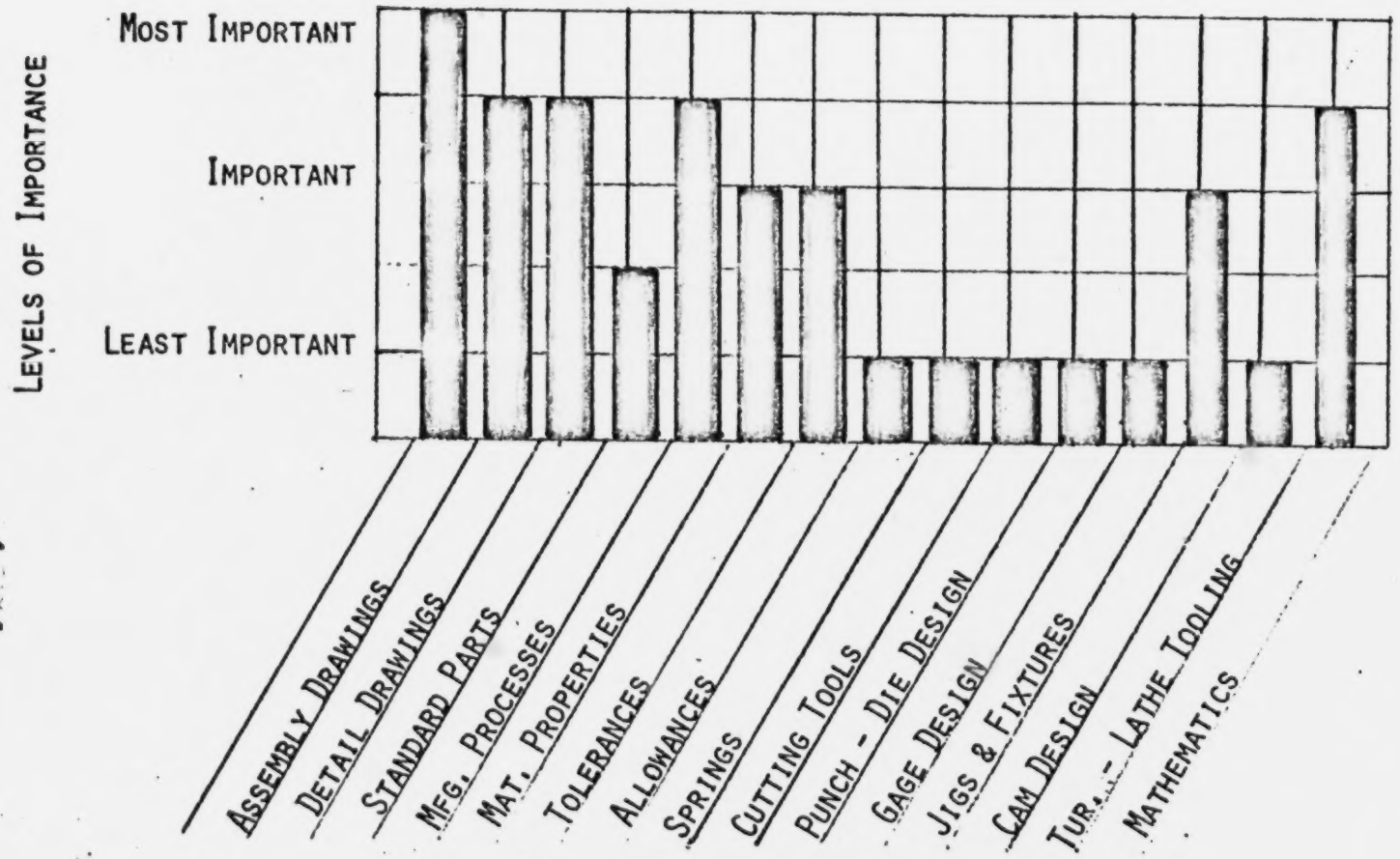
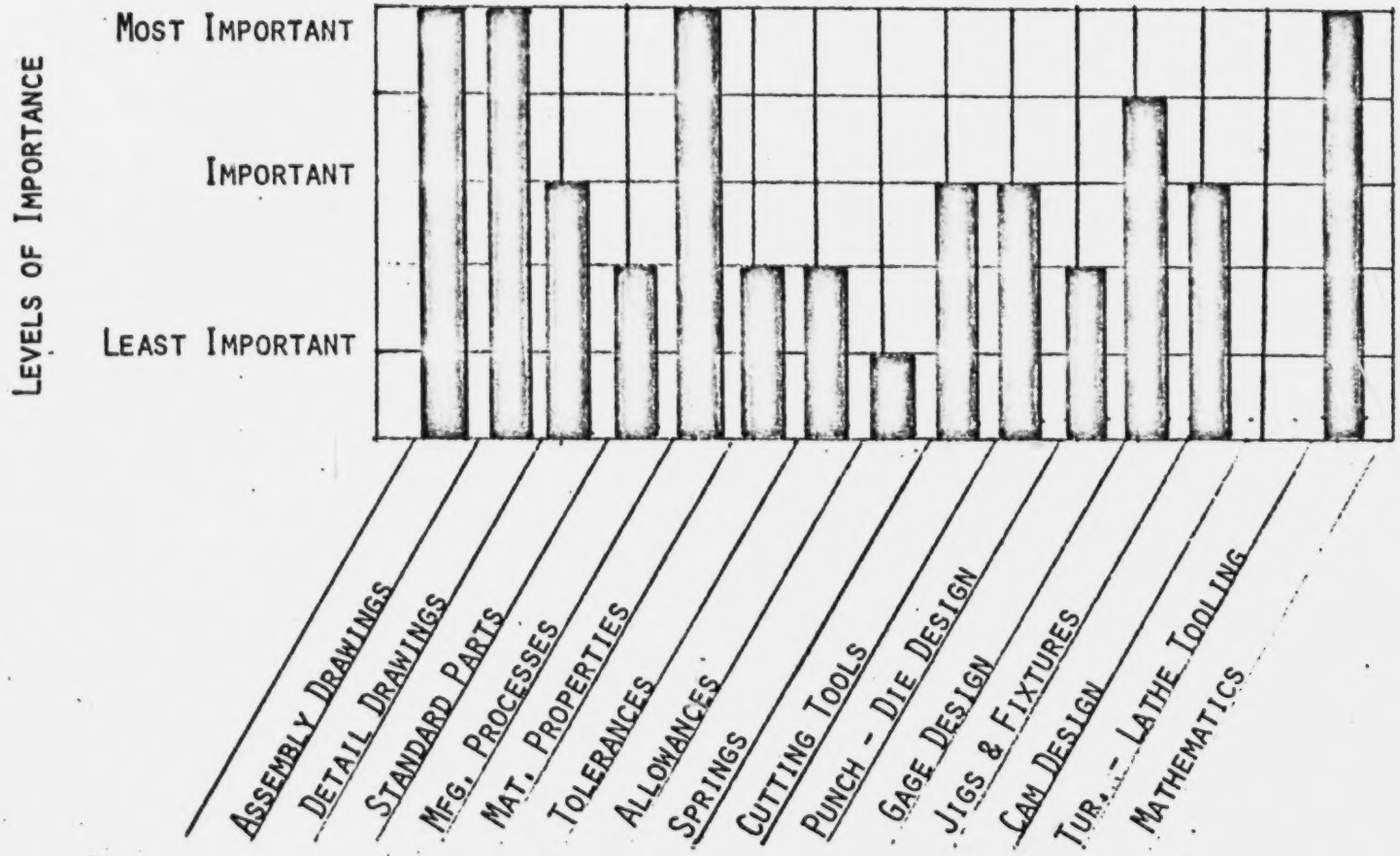


FIGURE 1-3 RESPONSES ACCORDING TO LEVELS OF IMPORTANCE BY INDUSTRY (Buckeye Cellulose Corporations)



Areas Included in the Questionnaire

Figure 14 Responses According to Levels of Importance

By Industry (Chicago Bridge And Iron, Production Plant)

abroad. Here the areas of assembly and detail drawing, manufacturing processes, properties of materials, tolerances and mathematics were considered most important of those included in the questionnaire. The other areas were not regarded as being important. See Figure (1-5).

CLEO WRAP CORPORATION

This industry is a large manufacturer of gift wrapping paper, gift boxes, cards and other paper products. They have a large engineering department that designs and redesigns tools, equipment and layout of special facilities. The representative indicated that tool and machine design are quite essential in their firm. He indicated that detail drawings, assembly drawings, tolerances and allowances and mathematics were the most important areas. Stress and motion of tools should be stressed. See Figure (1-6).

DOVER ELEVATOR CORPORATION

Dover Elevator Corporation is a manufacturer of elevators for home, commercial, and industrial uses. This is a very large industry and has a very large engineering department. They design all their equipment and products.

The representative explained that the type of industry would determine the type of content of tool design courses. Assembly and detail drawings, elementary jigs and fixtures and mathematics are the areas that were stressed most. Other areas could be accomplished on the job through an orientation program. See Figure (1-7).

FIRESTONE TIRE AND RUBBER PLANT

This firm is basically a large tire manufacturer. In their large

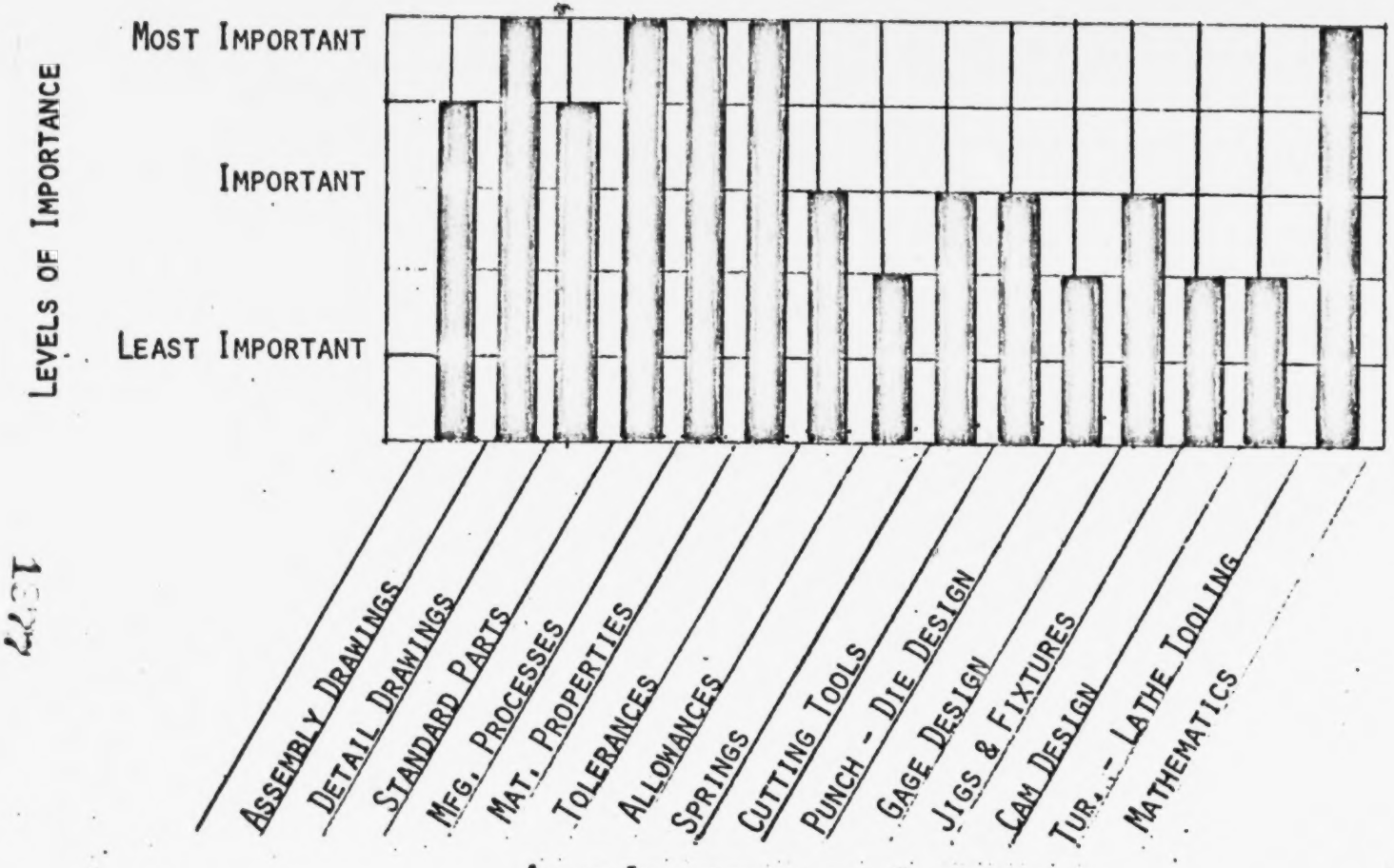


FIGURE 1-5 RESPONSES ACCORDING TO LEVELS OF IMPORTANCE

BY INDUSTRY (Chicago Bridge And Iron, Engineering Department)

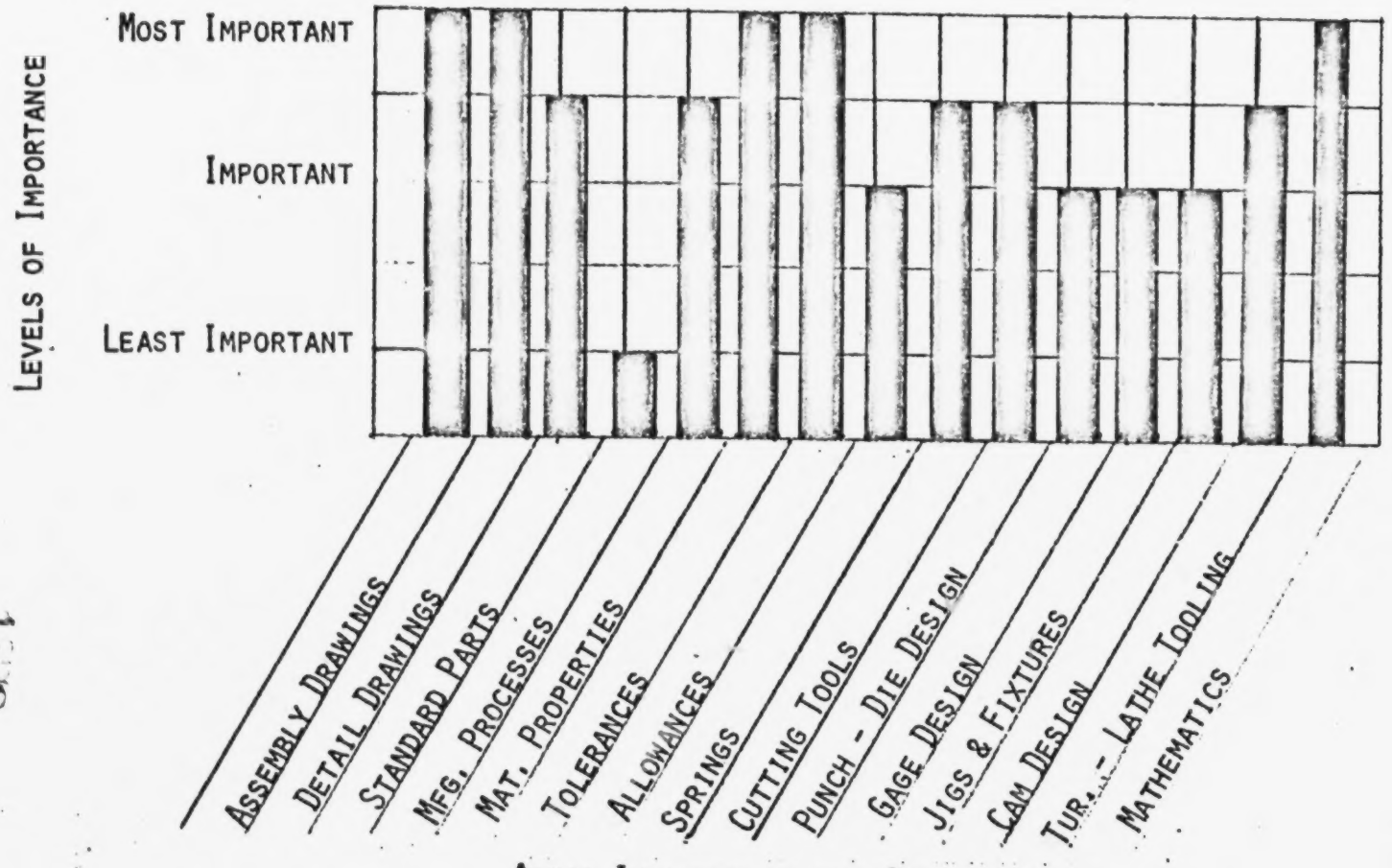


FIGURE 1-6 RESPONSES ACCORDING TO LEVELS OF IMPORTANCE BY INDUSTRY (Cleo Wrap Corporation)

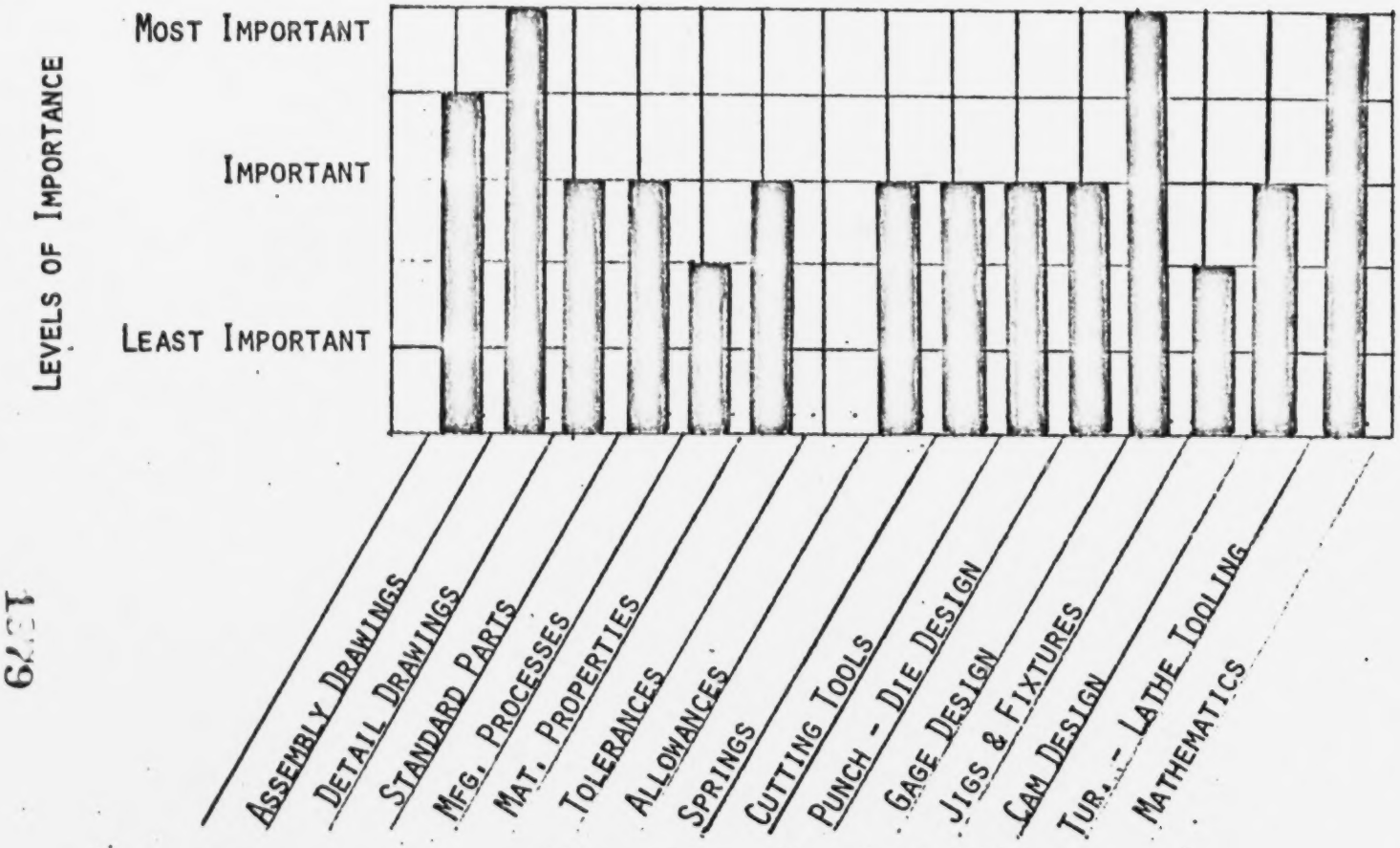


FIGURE 1-7 RESPONSES ACCORDING TO LEVELS OF IMPORTANCE BY INDUSTRY (Dover Elevator Corporation)

engineering department, the firm is constantly making changes in tooling and machines especially when products change or new ones come on the market. Because of competition, safety features, and increased performance, passenger tire sizes and structures are constantly changing. Most areas in question were rated most important. See Figure (1-8)

WILLIAM ELLIS AND SONS MACHINE WORKS

William Ellis and Sons Machine Works is a large machine tool industry that specializes in welding, foundry work, fabricating, manufacturing, pattern work and engineering. The representative here stated that the average draftsman is very poor at placing dimensions, tolerances and important notes on drawings. He indicated most of the areas in question as important. See Figure (1-9).

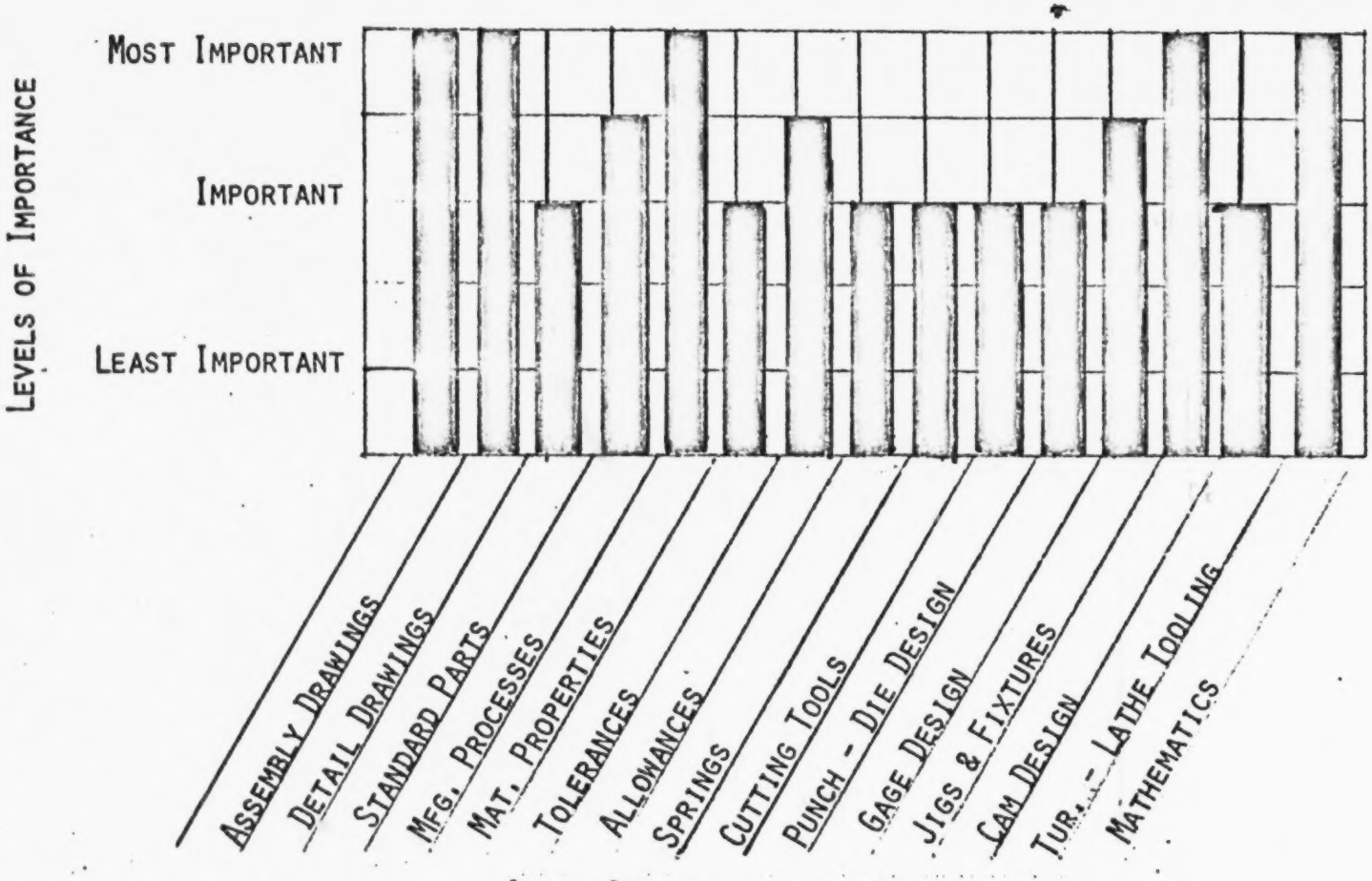
INTERNATIONAL HARVESTER

International Harvester is a large producer of farm equipment, harvesting and material handling equipment and equipment parts. They have a very large drafting and design department that does all the design work for production.

The tooling engineer was interviewed and was greatly impressed with the idea of trying to formulate significant areas into the curriculum that would place more competent personnel on the employment market to enter this profession. In his opinion the areas in question rated from important to most important. See Figure (1-10).

INDUSTRIAL TOOL COMPANY

Industrial Tool Company specializes in machine tool work, and produce dies, gages, fixtures and drilling of special machine works.



Areas Included in the Questionnaire

Figure 1-8 Responses According to Levels of Importance

By Industry (Firestone Tire And Rubber Plant)

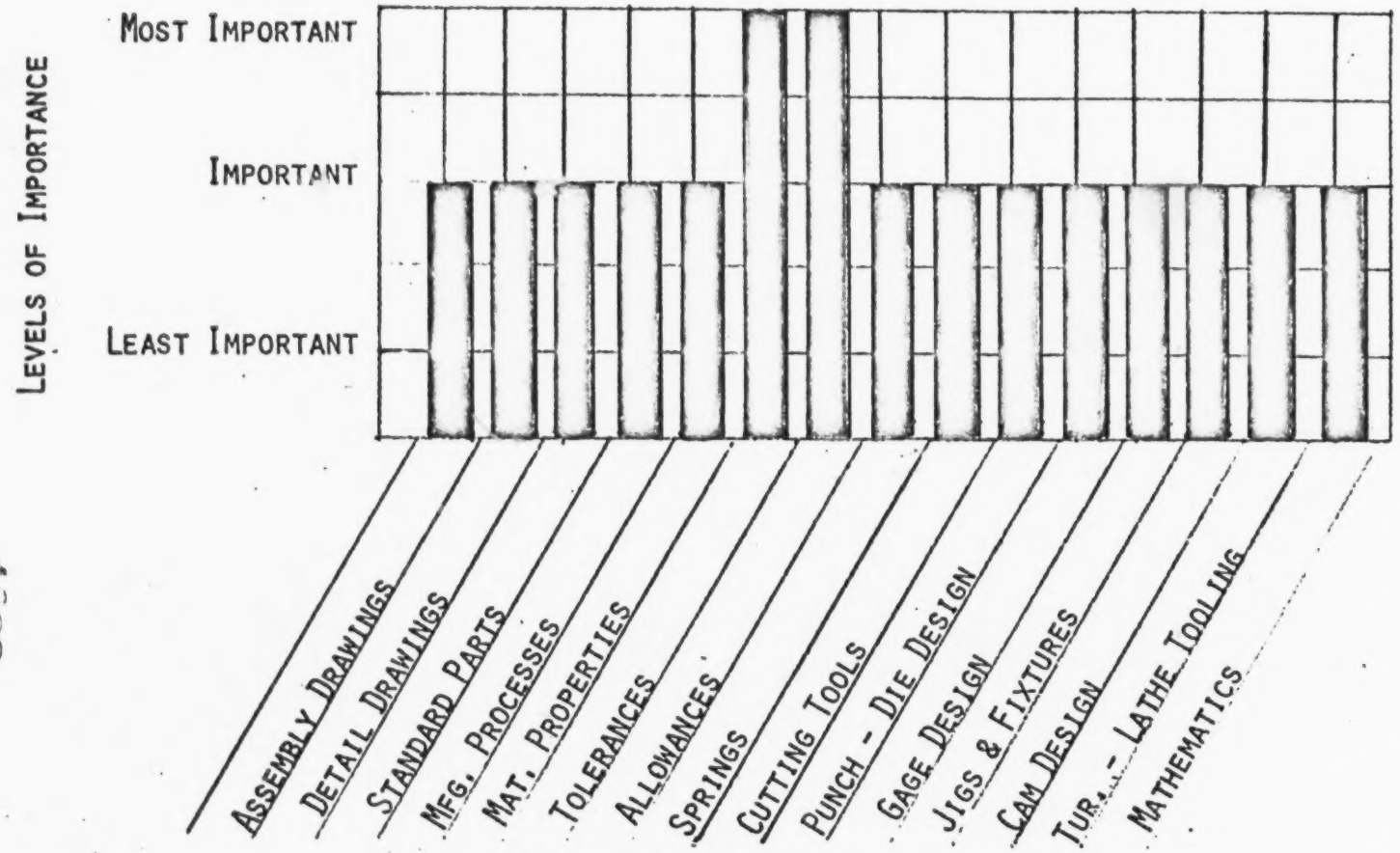


Figure 19 Responses According to Levels of Importance

By Industry (William Ellis And Sons Machine Works)

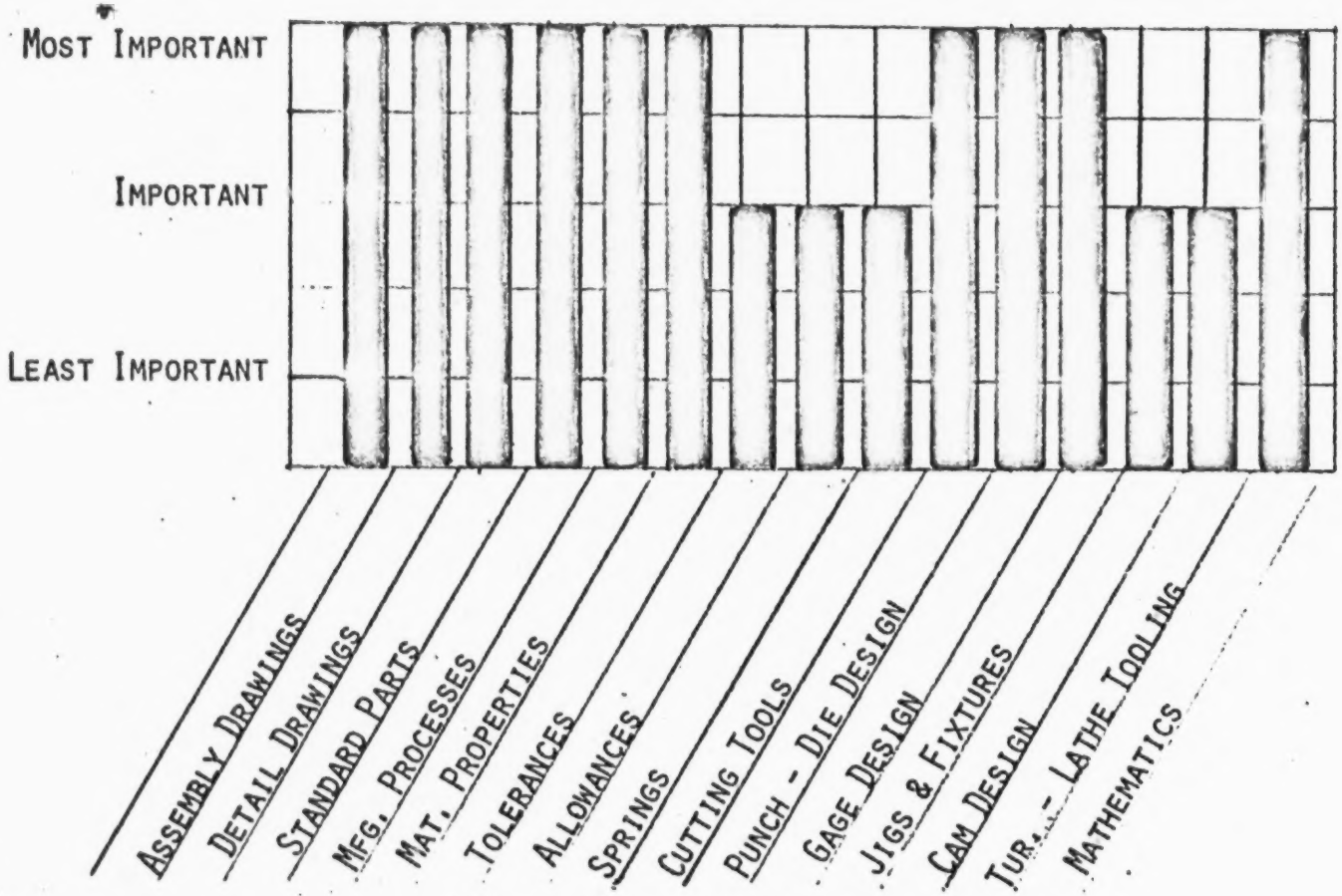


FIGURE 1-10 RESPONSES ACCORDING TO LEVELS OF IMPORTANCE BY INDUSTRY (International Harvester)

The shop foreman was interviewed, and indicated, that he regarded standard parts, properties of materials, tolerances, punch and die design and mathematics as being the most important areas. He expressed that the other areas were of little importance. See Figure (1-11).

MEMPHIS LIGHT, GAS, AND WATER DIVISION

Memphis Light, Gas, and Water Division, a public utilities firm, has a large drafting and design department that takes care of all the drafting and design needs for services throughout the city. The representative here made reference to assembly drawings, detail drawings and properties of materials as being the most important areas. All other areas fall between important and most important. He also stated that emphasis should be placed on design procedure. See Figure (1-12).

NORTH AMERICAN ROCKWELL, INC.

North American Rockwell, Inc. specializes in die making, general machine work, tools, jigs, fixtures and electrical discharge machinery. The plant manager, who is a former tool designer, was interviewed at this company. He expressed great interest in giving his assistance in a study of this type. He indicated that assembly drawings, manufacturing processes, properties of materials, tolerances, punch and die design and mathematics as being the most important areas. He indicated that there was a need for some knowledge of heat treatment, electrical discharge machining and welding. He also pointed out that in this firm they make an extensive use of templates to save time and labor. See Figure (1-13).

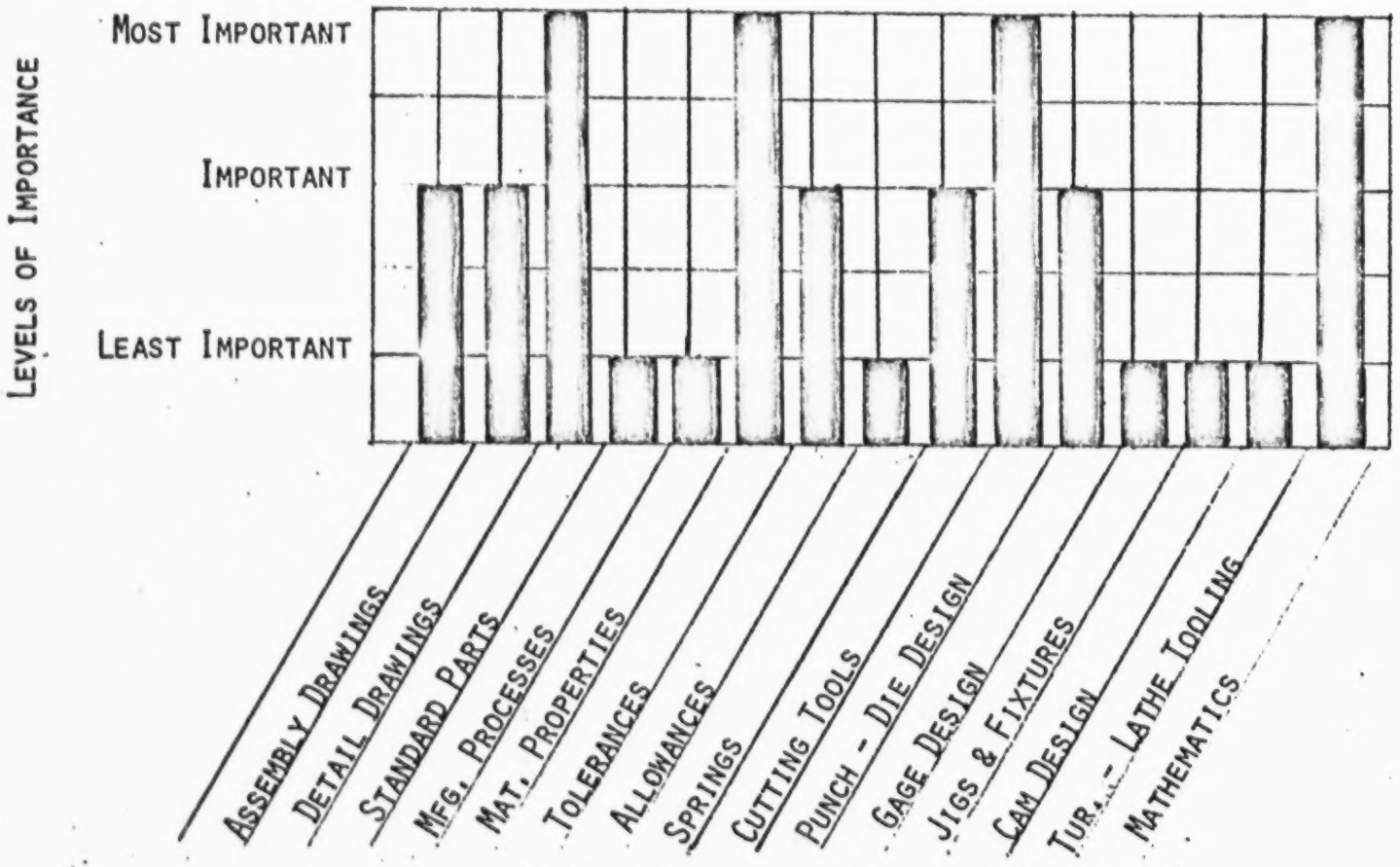


FIGURE 1-11 RESPONSES ACCORDING TO LEVELS OF IMPORTANCE BY INDUSTRY (Industrial Tool Company)

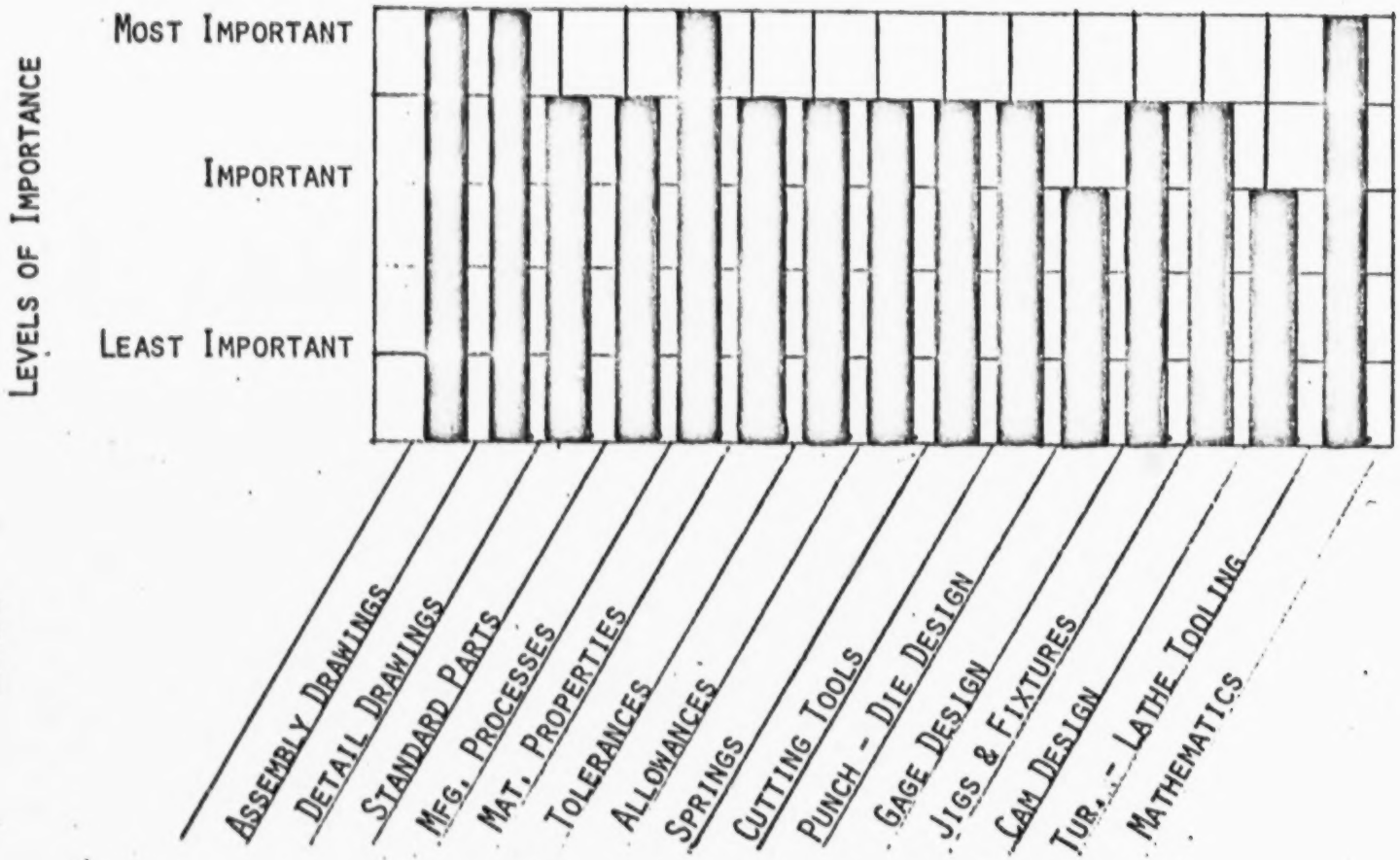


FIGURE 1-12 RESPONSES ACCORDING TO LEVELS OF IMPORTANCE BY INDUSTRY (Memphis Light Gas And Water Division)

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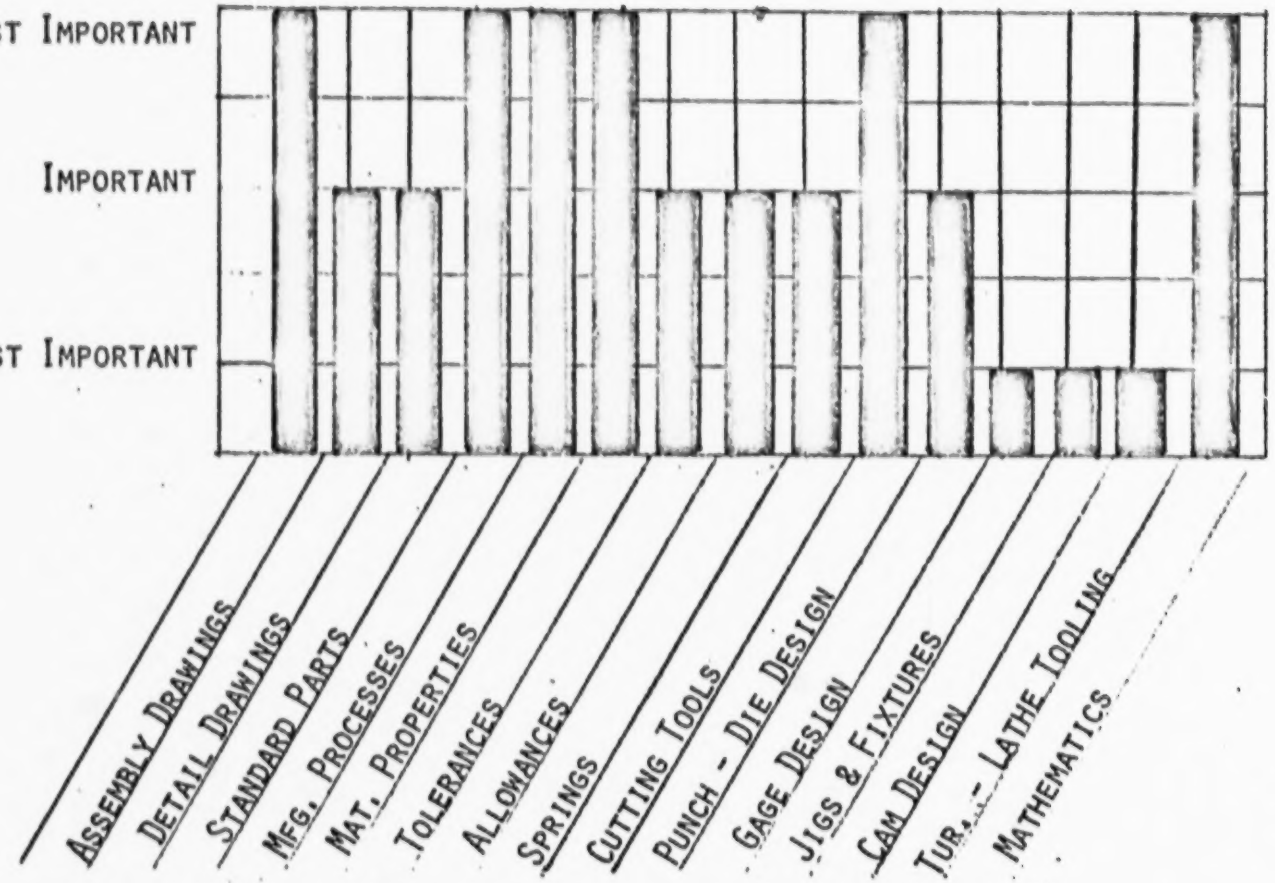

FIGURE 1-13 RESPONSES ACCORDING TO LEVELS OF IMPORTANCE BY INDUSTRY (North American Rockwell, Inc.)

PLOUGH INCORPORATED

Plough Incorporated is a large manufacturer of patent medicines and cosmetics. The representative here indicated that most of the areas in question were important. He indicated further that machine shop technology should be covered to some extent due to the lack of shop experience in many draftsmen's background. See Figure (1-14)

WILLIAMS MACHINE WORKS, INC.

Williams Machine Works, Inc. specializes in general machine work, tool and die manufacture, jigs, fixtures, foundry work and numerical control machining. The representative here indicated assembly drawings, detail drawings, manufacturing processes, and mathematics as being the most important. He also pointed out that there is a need for some emphasis on machining processes and economics of business. See Figure (1-15).

SUMMARY

The researcher surveyed fifteen industries in the vicinity of Memphis. The following areas of assembly drawings, detail drawings, knowledge of standard machine and tool parts, manufacturing processes, properties of materials, tolerances, allowances, use of springs, cutting tools, punch and die design, gages and gage design, elementary jigs and fixtures, can design, turret lathe tooling and mathematics as related to tool design were included on the instrument used for collecting samples. There was a wide range of opinions on each area above obtained from the sample.

The following areas assembly drawings, detail drawing, manufacturing processes, properties of materials, tolerances, punch and die de-

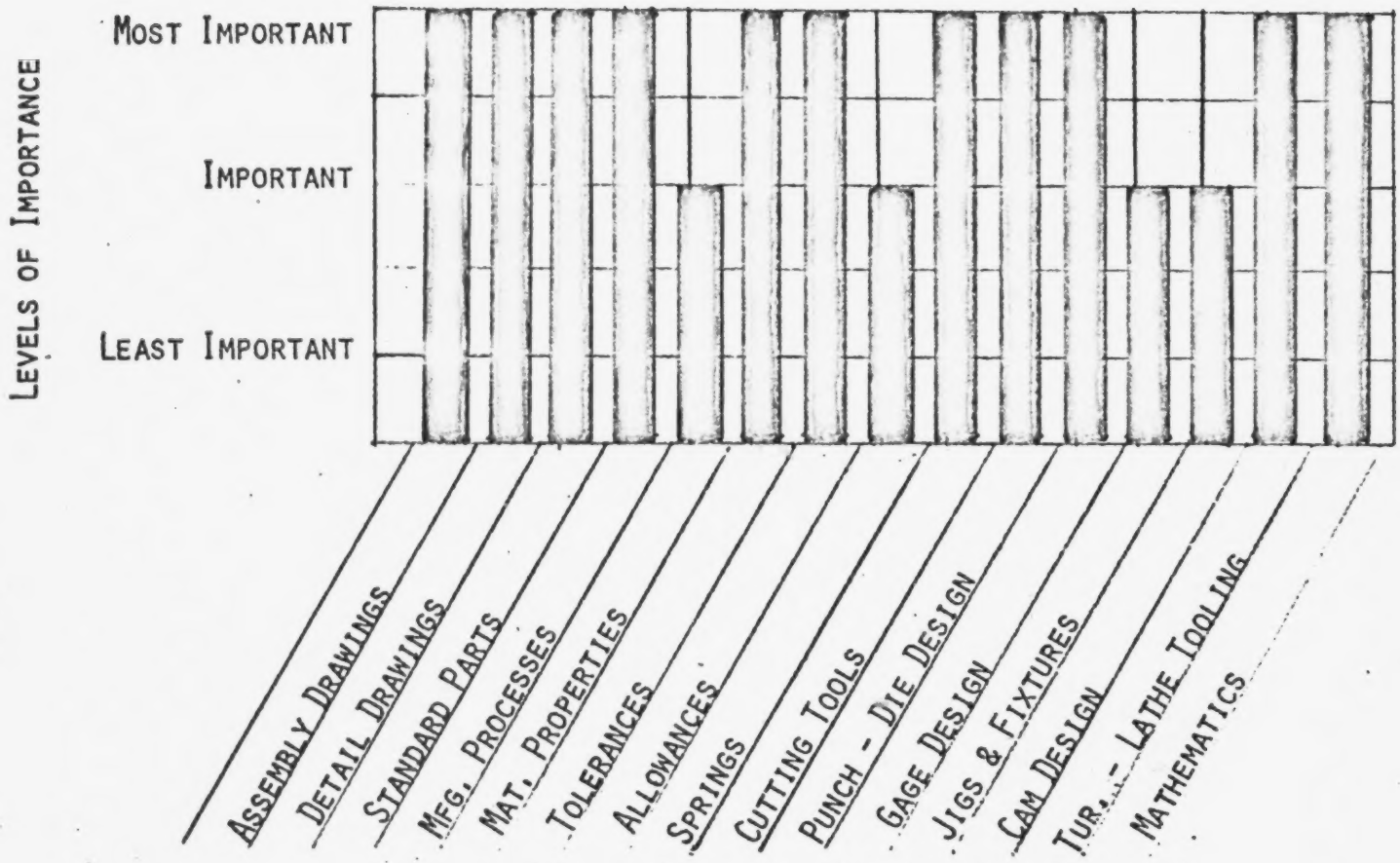

Figure 1-14 Responses According to Levels of Importance By Industry (Plough Incorporated)

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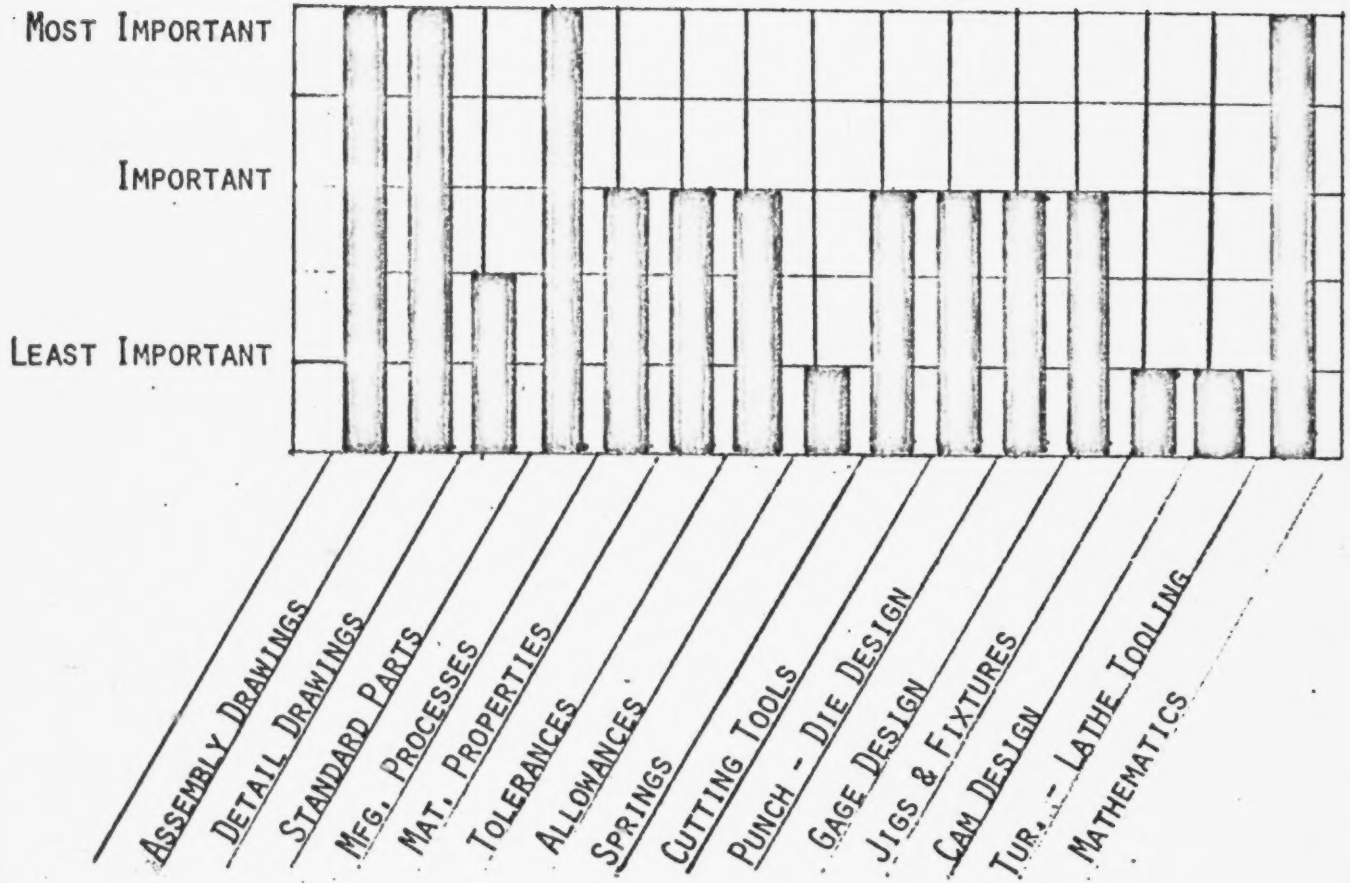

FIGURE 1-15 RESPONSES ACCORDING TO LEVELS OF IMPORTANCE BY INDUSTRY (Williams Machine Works, Inc.)

sign, and mathematics were rated most important by the sample. The areas that were rated important were allowances, use of springs, cutting tools, cam design, jigs and fixtures, gage design and turret lathe tooling. See Figure (2-1).

Some of the interviewees suggested areas to be included in tool design course content not covered in the questionnaire. These areas were shop procedure, heat treatment of steels, fluid mechanics, sketching, mechanics of machinery, electrical discharge machining, welding, and economics of business operations.

RECOMMENDATIONS

The researcher makes the following recommendations based on a graphical analysis made on the findings. In a curriculum of tool design emphasis should be placed on assembly drawings, detail drawings, manufacturing processes, properties of materials, tolerances, punch and die design and mathematics as related to tool design. Also, some consideration should be given to shop procedure, heat treatment of steels, fluid mechanics, mechanics of machinery, and electrical discharge machining.

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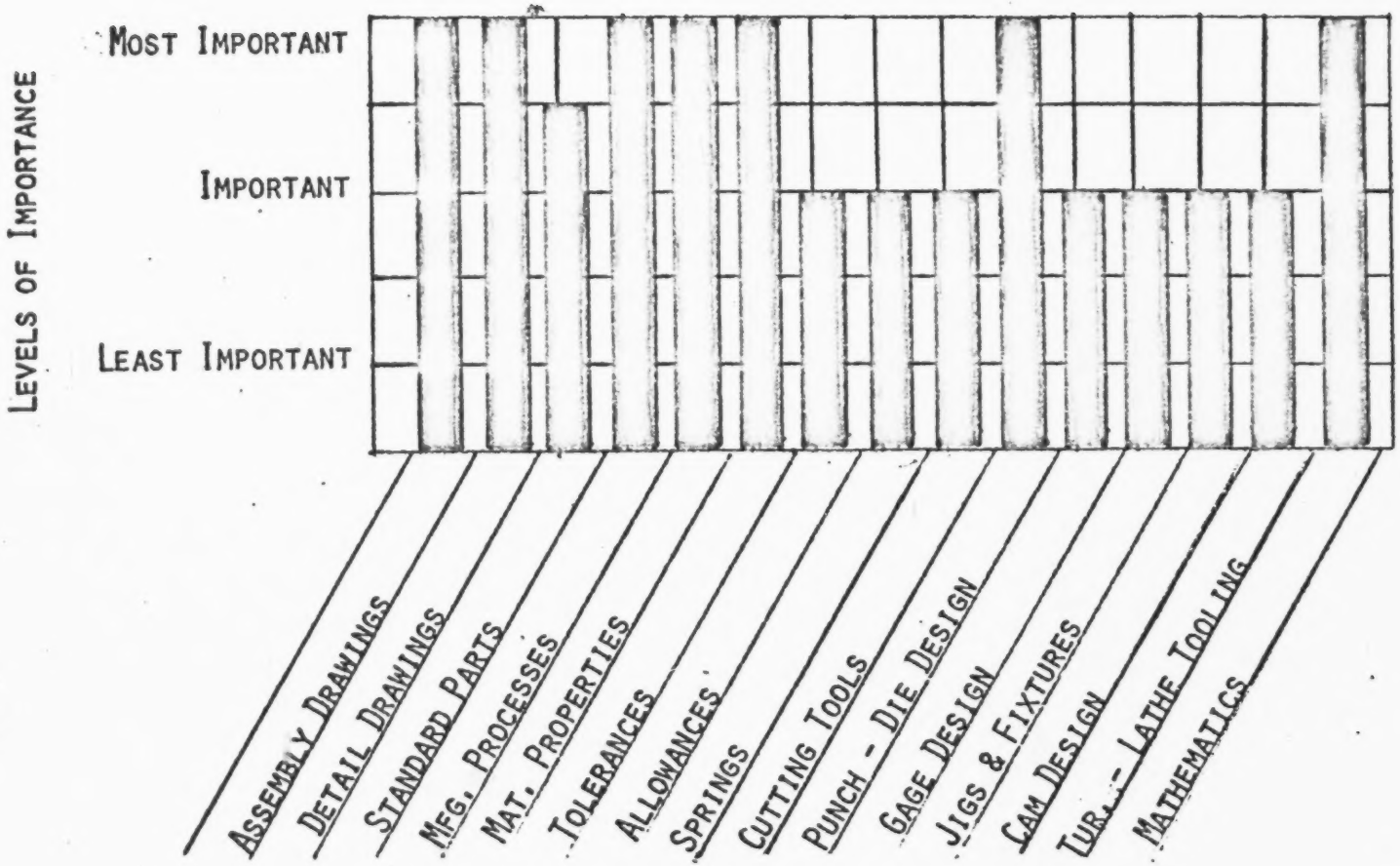

FIGURE 2-1 SUMMATION OF RESPONSES ACCORDING TO LEVELS OF IMPORTANCE BY INDUSTRY

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LOVELESS, AUSTIN G.; WISER, GORDON
HOME CONSTRUCTION PROJECT IN THE WEBER COUNTY HIGH SCHOOL DISTRICT. FINAL REPORT.

UTAH RESEARCH COORDINATING UNIT FOR VOCATIONAL AND TECHNICAL EDUCATION, SALT LAKE CITY.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
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IDENTIFIERS - *WEBER COUNTY HIGH SCHOOL DISTRICT

ABSTRACT - IN AN EFFORT TO GATHER DATA ON THE HOME CONSTRUCTION CLASS NEWLY ADDED TO THE VOCATIONAL PROGRAM IN THE WEBER COUNTY HIGH SCHOOL DISTRICT SO AS TO ASSESS ITS QUALITY, SCHOOL HANDOUTS WERE UTILIZED AS WELL AS RESPONSES FROM THE QUESTIONNAIRES WHICH WERE DISTRIBUTED TO CURRENTLY ENROLLED STUDENTS, 1970-1971 GRADUATES FORMERLY ENROLLED IN THE CLASSES, AND COUNSELORS INVOLVED IN THE SELECTION OF STUDENTS FOR THE CLASSES. CONCLUSIONS REACHED INCLUDE: (1) APPROPRIATE STUDENTS ARE BEING ENROLLED IN THESE CLASSES, (2) STUDENTS WHO COMPLETE THIS TYPE OF TRAINING BY AND LARGE FIND EMPLOYMENT IN THE TRADE, (3) THE USE OF A NON-CERTIFIED JOURNEYMAN CARPENTER AS AN INSTRUCTOR HAS PROVEN TO BE HIGHLY SUCCESSFUL, AND (4) BASED ON THE RELATIVELY HIGH NUMBER OF STUDENTS WHO OBTAIN JOBS IN THE CONSTRUCTION INDUSTRY COMPARED WITH OTHER TRADE AND INDUSTRIAL PROGRAMS, THE HOME CONSTRUCTION CLASSES IN WEBER DISTRICT CAN BE CONSIDERED SUCCESSFUL. (SN)

FINAL REPORT

Project No. 603046
Grant No. OEG-4-7-063046-1612

HOME CONSTRUCTION PROJECT IN THE WEBER COUNTY HIGH SCHOOL DISTRICT

July 1972

U. S. Department of
Health, Education, and Welfare

Office of Education
Bureau of Research

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FINAL REPORT

Project No. 603046
Grant No. OEG-4-7-063046-1612

HOME CONSTRUCTION PROJECT IN THE WEBER COUNTY HIGH SCHOOL DISTRICT

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HOME CONSTRUCTION PROJECT IN THE

WEBER COUNTY HIGH SCHOOL DISTRICT

Background

The Weber County School District has made a concentrated effort to improve the vocational education program in their high schools by the addition of a home construction program. This program is the result of the combined efforts of the school district personnel, PTA members and the Weber County Advisory Committee for Vocational Education (composed of various lay people representing business and industry). The advisory committee was given the charge of making recommendations and soliciting support to bring about changes in the vocational curriculum of the Weber School District. Committee members emphasized the need for practical application (hands-on) experiences and instructions from the trades.

The Weber Basin Homebuilders Association became involved in the program and suggested the construction of a home by the high school students. With the donation of $500.00 dollars by the Homebuilders Association and the donation of a choice building site by a land developer, Douglas Stephens, the home construction program was underway at the Bonneville High School.

A journeyman carpenter with several years of experience in home construction was recruited as class instructor at the suggestion of the Homebuilders Association. This was considered a full time assignment and the class instructor was, and still is, paid an annual wage by the Weber County School District.

Bonneville High School started the home construction class in 1969 and in 1970 the project was extended to the Roy High School and Weber High School. The homes are constructed from the ground up by the high school students,

under the direction of the instructor (journeyman carpenter) and are sold on the market at competitive prices. Each school builds one home per school year. Profits from the sale of the homes are placed back into the program to perpetuate this type of training.

The class consists of two sections, one three hour block in the morning and one in the afternoon. Students are allowed to take only one three hour block (in the morning or afternoon) along with their other high school classes. Students are not permitted to take the class more than one time. Each class is held to a maximum of approximately ten students, thus graduating around twenty students a year from each school.

Instruction consists mostly of on-the-job training. Lectures are given only as required and at the beginning of each phase of construction. Skills are developed primarily in the field of carpentry; however, through the use of subcontractors and other licensed mechanics students have become involved in plumbing, electrical installation, roofing, dry-welling, cement finishing, painting and other specific skills related to home construction.

Other classes in the high schools which have been involved in the home construction program are as follows:

1. Vocational Drafting - house plans and plot layout
2. Business - keeping books and bank accounts
3. Home Econ. - interior decorating and home layout
4. Vocational Ag. - landscaping and planting
5. Distributive Ed. - open house and sales promotion
6. Electronics - home wiring
7. Industrial Arts - cabinet making

Statement of Problem

There is no data available on the high school home construction class in

the vocational education program of the Weber County High School District. The purpose of this study was to gather the necessary data to answer the following questions:

1. Are the appropriate students being enrolled in the program?
2. What has been the destination of the students when they complete the program?
3. What support have students in other programs (classes) rendered to the T & I Program?
4. What impact has the program had on students in other classes?
5. Has the dropout rate in your high school changed significantly since the experimental program began?
6. Has there been a noticeable difference in the educational or occupational choices of the students since the initiation of the course?
7. Are there any community donated services associated with the program?
8. Has the use of a non-certified teacher posed any problems with the high school faculty, students, and/or the parents?
9. Does the program provide the student with adequate training in the field of carpentry to provide employment opportunities upon completion of the course?
10. Have any other classes been added to the high school curriculum because of this course?

Procedure

Data for this study were collected from the following sources:

1. A questionnaire was sent to the graduates of the home construction classes of 1970 and 1971. (See appendix)
2. A questionnaire was administered to the students currently enrolled in the home construction classes. (See appendix)
3. A questionnaire was completed by the counselors involved in the selection of the students for the home construction classes from the three Weber District high schools.

4. Handout material from Weber County School District.

Findings

Every home in this program is constructed in accordance with the area building codes and must pass all required inspections. Under the careful guidance of the instructor (journeymen carpenter and building contractor) the students do top quality work. There is usually plenty of time to complete the home during the school year so that if anything is not done correctly the first time, it can be done again under the close supervision of the instructor.

Students are assigned tasks just as if they were actually on the job, with the main difference being that they have the instructor to help them with any problem or question that may arise. The students seem to be fairly well organized and keep busy at their assigned tasks without continual encouragement from the instructor.

There are several other areas involved in the construction of the home besides the students in the class. Some of the other areas and a brief description of their activities are quoted from a handout from the Weber County School District as follows:

> Through the vocational drafting program in the schools, the various house plans have been developed, providing a practical application for those students interested in architecture. They have worked on the plot layout as well as developing the detailed house plans, which, in each case, have been submitted to the FHA for approval.
>
> Bookkeeping has also been a vital part of the program. Through the bookkeeping department, a particular group of students ranging in number from probably two to five have been given the opportunity, through practical application, to develop their skill in bookkeeping. A special bank account was opened with deposits being made in the sum of $5,000 as the money was needed. Under the direction of bookkeeping instructors, the students would write all checks, pay bills, etc., relative to this project.

The homeliving department also played a very important role in the development of these home projects. They worked directly with the architect in developing the plan. They would work with the contractor, suggesting constructional and operational changes as the building progressed. They also developed their interior decorating skills further by choosing paints and developing the color scheme. These same girls worked with the local home furnishing outlets in selecting furniture and other decorating needs in preparation for an openhouse.

A drapery construction and power machine operation program was also developed in conjunction with this home construction. In this program, the girls involved learned how to measure openings and how to determine drapery material needs. They learned how to cut and measure materials. They also operated the power machines found in industry.

Another related area where skill has been developed is the area of landscaping. In our high schools where a vocational agriculture program is in operation, vocational agriculture students assumed the responsibility of selecting and designing a landscape scheme as well as the actual planting. In some cases, the biology department assumed this responsibility.

As a finale to this project, the distributive education students became involved in sponsoring an open house. They developed descriptive sales-handout materials. They also had first-hand experience of conducting guests through the home and pointing out the attributes and other sales-promotional techniques essential to the sale of such real estate.

All in all some 80 to 120 students have been involved directly in the planning and development of the finished home. These figures would apply to each of the separate programs at the three high schools.[1]

Besides the areas listed above, students from the electrical classes helped in the wiring of the homes and students from the metals class aided by the construction of metal projects such as porch railings.

---

[1]Handout, Weber County School District, Ogden, Utah. August, 1971. pp. 4-5.

Part I

Data received from graduates of the home construction class.

A letter and questionnaire was sent to the 73 graduates of the home construction classes from the three high schools. The first mailing resulted in only 8 responses. A second mailing was made two weeks later and 4 additional responses were received, making a 16 percent return. A personal contact was made to the homes of students where valid addresses were available. In the majority of contacts the student was not home, but one or more of the parents were home and agreed to encourage their son to respond to the questionnaire. This effort resulted in an additional 40 responses being returned, making a total of 52 or 71 percent of the questionnaires being returned.

The result of the question to the graduate of the home construction class dealing with the graduate employment status following completion of the class can be seen in Table 1.

Table 1. Employment Status of the Graduate of the Home Construction Classes. April - 1972

Employment Status	Bonneville 1969-70		Bonneville 1970-71		Roy		Weber		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Construction	7	58	5	35	6	40	7	36	22*	42
Non-Construction	4	33	4	30	6	40	3	27	17	33
L.D.S. Mission	0	0	1	7	0	0	1	9	2	3
Service	0	0	2	14	2	14	2	19	6	12
Continuing School	1	8	2	14	0		1	9	4	8
Unemployed	0	0	0	0	1	6	0		1	2
Total	12		14		15		11		52	

*33 of the 52 had worked in the construction trade at some period of time since graduation.

It can be seen from Table 1 that for those students who were working, a higher percent, 22 or 42 percent, were working in some area of construction than were working in non-construction type jobs. In addition to the 22 graduates that were working in the construction field at the time of the survey, 11 graduates indicated they had worked in the construction field since graduation but were now working in other fields or involved in other activities.

In responding to the question dealing with the value the course had been to them since graduation, of those students who had worked in the construction field, 18 or 55 percent of them indicated that the class had been a great deal of value to them. Only one student indicated that the class had been of no value to him as shown in Table 2.

Table 2. Value of the Home Construction Course to Those Graduates Who Had Worked in the Construction Field.

Response	Bonneville		Roy		Weber		Total	
	No.	%	No.	%	No.	%	No.	%
No value to you in the trade	0	0	0	0	1	11	1	3
Helps you some in the trade	2	12	1	12	1	11	4	12
Fair amount of value to you	5	31	4	50	1	11	10	30
Great deal of value to you	9	57	3	38	6	67	18	55
Total	16		8		9		33	

When asked if the home construction class had adequately prepared them for a vocation as a carpenter, 12 or 36 percent of the graduates who were working in the construction trade indicated that the class had adequately prepared them, while another 16 or 48 percent responded that the class had helped to a fair degree in preparing them in the field of carpentry. (See Table 3)

Table 3. The Extent the High School Home Construction Class Had Prepared Those Who Had Worked in Construction for the Vocation of a Carpenter.

Response	Bonneville No.	%	Roy No.	%	Weber No.	%	Total No.	%
Not at all	0	0	0	0	0	0	0	0
To a small degree	4	24	1	12	0	0	5	16
To a fair degree	5	31	5	63	6	67	16	48
Completely	7	45	2	25	3	33	12	36
Total	16		8		9		33	

In response to the question, "Has the knowledge obtained from the home construction class been of value to you?" those graduates who had not worked in construction as shown in Table 4, only 4 or 17 percent indicated that the class had been of little value to them. The remaining students indicated that the class had been of value to them either on their present job and/or useful at home. (Several students checked more than one response.)

Table 4. Value of the Home Construction Course to Those Graduates that Had Not Worked in the Construction Field.

Response	Bonneville No.	%	Roy No.	%	Weber No.	%	Total No.	%
Very little	3	25	0	0	1	33	4	17
Use skills at present job	3	25	2	22	1	33	6	25
Use skills at home	6	50	7	78	1	33	14	58
Others	0	0	0	0	0	0	0	0
Total	12		9		3		24	

In response to the question as to the degree the home construction course had prepared them for a vocation as a carpenter, 6 or 32 percent of those students who had not worked in construction indicated that it had prepared them completely and another 13 or 68 percent indicated it had prepared them to a fair degree.

Table 5. The Extent the High School Home Construction Class had Prepared Those Who had Not Worked in Construction for the Vocation of a Carpenter.

Response	Bonneville		Roy		Weber		Total	
	No.	%	No.	%	No.	%	No.	%
Not at all	0	0	0	0	0	0	0	0
To a small degree	0	0	0	0	0	0	0	0
To a fair degree	6	60	5	71	2	100	13	68
Completely	4	40	2	29	0	0	6	32
Total	10		7		2		19	

Part II

When the students who were currently enrolled in the home construction classes were asked as to the adequacy of the class to prepare them to become a carpenter, 15 or 38 percent of the respondents indicated that the class was preparing them completely while the remaining 22 or 57 percent indicated that they thought the class was preparing them to a fair degree. (See Table 6.)

Table 6. The Degree the Students Presently Enrolled in the Home Construction Class Think the Class is Preparing Them for a Vocation as a Carpenter.

Response	Bonneville No.	%	Roy No.	%	Weber No.	%	Total No.	%
Not at all	0	0	0	0	0	0	0	0
To a small degree	0	0	0	0	2	25	2	5
To a fair degree	11	65	6	43	5	63	22	57
Completely	6	35	8	57	1	12	15	38
Total	17		14		8		39	

When questioned with regards to their future vocational plans, 32 or 62 percent of the students currently enrolled in the home construction class stated that they plan to continue in some area of the construction industry. (See Table 7) Only 5 or 9 percent indicated that they were planning a different vocational area.

Table 7. Future Vocational Plans of Students Currently Enrolled in Home Construction Class.

Response	Bonneville No.	%	Roy No.	%	Weber No.	%	Total No.	%
Plan on entering another trade	0	0	3	14	2	20	5	9
Plan on continuing my education	4	20	8	36	3	30	15	29
Plan on entering construction	16	80	11	50	5	50	32	62
Total	20		22		10		52	

Those students who indicated that they planned on entering the construction trade were asked to indicate the area of the trade they planned on entering. The response to this question can be seen in Table 8. Many students

checked more than one area. It can be noted that the construction area of carpentry was checked 31 or 79 percent of the time by the respondents.

Table 8. Areas of the Construction Trade the Students Currently Enrolled Plan on Entering After Completion of Class.

Areas of Construction	Bonneville		Roy		Weber		Total	
	No.	%	No.	%	No.	%	No.	%
Dry-wall	4	8	7	13	0	0	11	8
Plumbing	4	8	6	10	1	5	11	8
Cement finishing	3	6	6	10	0	0	9	7
Carpentry	15	28	12	21	4	20	31	24
Electrical wiring	0	0	3	5	0	0	3	2
Roofing	8	15	7	13	3	15	18	14
Bricklaying	11	20	6	10	0	0	17	13
Painting	3	6	6	10	1	5	10	8
Other	5	9	5	8	11	55	21	16
Total	53		58		20		131	

As can be seen in Table 9, all of the students rate the home construction class as the most valuable class or by far the best class they have taken in high school.

Table 9. Comparison of the Home Construction Class with Other Classes Taken in High School by Students Currently Enrolled.

Overall Comparison With Other Classes	Bonneville No.	%	Roy No.	%	Weber No.	%	Total No.	%
Not worth as much	0	0	0	0	0	0	0	0
About the same	0	0	0	0	0	0	0	0
More valuable	6	35	3	21	3	37	12	31
By far the best	11	65	11	79	5	63	27	69
Total	17		14		8		39	

Part III

The counselors responsible for vocational counseling at each of the three high schools were asked to respond to several questions relating to the home construction class. Their responses are summarized below.

Students in the main are in this class because of an interest they have for this type of vocation. A small number are in the class as a result of parents requesting their son be place in the program. One step used in the selection process by all three schools was an interview by the teacher-contractor with each student who applies for the class.

The counselors were in agreement that the students enrolled in this class are among those that can gain the most from this type of class. One counselor stated, "We need many more projects to cover the needs of these students. Those who need it most don't always have the desire to get in it."

In reply as to whether or not the home construction class had helped reduce the dropout rate of the high schools, one counselor indicated that it had not; others indicated to some degree, and one indicated that he did not know.

When asked about any donated services and material by outside people, one of the counselors stated that they received donated service with respect to instruction in special areas; the other two counselors were not aware of any donated services or material to the project.

Two of the counselors stated that discipline problems were no greater than in regular in-school instruction, while one counselor stated that "travel to and from building site created more truancy."

In responding to the question, "Has the use of a non-certified instructor (journeyman carpenter) created any problems with the high school faculty, student, and parents?" all three counselors stated that there had been no problem as far as parents and students were concerned, but two counselors indicated problems with faculty members. The nature of the problems were not revealed.

Two of the counselors indicated on a scale of from poor to excellent that the success of the program was excellent, and the other counselor stated that it was good.

In ascertaining the impact of the home construction class on other programs in the three high schools, it was noted that several other vocational classes became involved in the project at different times and degrees. Namely:

Vocational Drafting - Drawing house plans

Business - Keeping books and paying bills

Distributive Education - Advertising and selling house

Electricity-Electronics - Electrical wiring

*Home Economics - Decorating and draperies

Industrial Arts - Cabinets

Vocational Agriculture - Landscaping

*A new vocational class was started in two of the high schools in power sewing to make the draperies for the houses.

Summary

Thirty-three or 63 percent of the students who had graduated from the home construction class were now working or had worked in some area of the construction field.

Fifty-five percent of the graduates stated that the class had been of great value to them in their work. The graduate also indicated that the class had completely or to a fair degree prepared them to be carpenters.

Those graduates who had not worked in the construction field also indicated that the skills learned in the class had been of value to them in their present job and around their home.

Sixty-two percent of the students enrolled in the home construction class for the 1971-72 school year indicated that they were planning to work in some phase of the construction field after finishing the class.

In comparing the home construction class to other classes taken in high school, 100 percent of the respondents who were currently enrolled indicated that this class was more valuable to them than any of their other classes. All of the students currently enrolled also indicated that they would recommend this class to their friends.

Students are selected for the home construction class as a result of interest expressed by the students and screening by the instructor.

Several other vocational classes have become involved in several phases of the home construction class, namely: business education, distributive education, home economics, vocational agriculture, and several trade and industrial education classes. One new vocational class was started in two of the three high schools.

In the main the dropout rate of the three classes has not diminished to any noticeable degree.

Only one of the three high schools reported having any difficulty with other segments of the school as a result of hiring non-certified teachers.

The counselors at one of the high schools indicated a concern over increased discipline problems as a result of travel from school to the job.

Conclusions

Insofar as the data received in this report represents the thinking of the total population and that the responses of the population are accurate, the following conclusions can be made.

1. That the appropriate students are being enrolled in these classes.
2. That students who complete this type of training can and do find employment in the trade.
3. That the use of a non-certified journeyman carpenter has proven to be an effective instructor.
4. That based on the relatively high number of students who obtain jobs in the construction industry compared with other trade and industrial programs, the home construction classes in Weber District can be considered successful.

Recommendations

These home construction classes should be continued under the same general arrangement of student selection and continue using the journeyman carpenter as the instructor.

Consideration should be given to expand this type of practical vocational training into the other vocational classes wherever feasible.

APPENDIX

2014

HIGH SCHOOL VOCATIONAL EDUCATION PROGRAM
HOME CONSTRUCTION CLASS
QUESTIONNAIRE

Please read each question carefully and make an appropriate response by indicating your answer with a check mark.

1. Do you feel that this class adequately prepares you for a vocation as a carpenter? (check only one)

   a. Not at all ____
   b. To a small degree ____
   c. To a fair degree ____
   d. Completely ____

2. What are your future plans related to the skills acquired in this class? (check all that apply)

   a. Plan on entering another trade ____
   b. Plan to continue my education ____
   c. Plan to enter the construction trade ____

3. Does this class require any technical study outside of the class period? (check only one)

   Yes____ No____

4. Overall comparison of this class with the other high school courses. (check only one)

   a. Not worth as much to me ____
   b. About the same as other classes ____
   c. More valuable to me than other classes ____
   d. By far the best class I am taking ____

5. If you plan on entering the construction field after graduation, what area do you plan on entering? (check all that apply)

   a. Dry-wall ____
   b. Plumbing ____
   c. Cement finishing ____
   d. Carpentry ____
   e. Electrical wiring ____
   f. Roofing ____
   g. Brick laying ____
   h. Painting ____
   i. Others ____

6. Would you recommend this class to your friends?

   Yes____ No____

Current Student in Class

HIGH SCHOOL VOCATIONAL EDUCATION PROGRAM
HOME CONSTRUCTION CLASS
QUESTIONNAIRE

Please read each question carefully and make an appropriate response related to the home construction class.

1. List full-time employment after completion of high school home construction class:

	Job Title	Date
a. First Job	_____	_____
b. Second	_____	_____
c. Third	_____	_____
d. Others	_____	_____
e. Present Job	_____	_____

2. Answer only if you have worked in the construction trade. Has the knowledge obtained from the class been of: (check only one)

   a. No value to you in the trade ___
   b. Helps you some in the trade ___
   c. Fair amount of value to you ___
   d. Great deal of value to you ___

3. If you have not worked in the construction trade has the knowledge obtained from the class been of value to you: (check all that apply)

   a. Very little ___
   b. Use skills at present job ___
   c. Use skills at home ___
   d. Others _____

4. Do you feel that the high school home construction class you took adequately prepares the student for a vocation as a carpenter? (check only one)

   a. Not at all ___
   b. To a small degree ___
   c. To a fair degree ___
   d. Completely ___

5. How could the class be improved? _____
   _____
   _____

Student Who has Graduated

HIGH SCHOOL VOCATIONAL EDUCATION PROGRAM
HOME CONSTRUCTION CLASS
QUESTIONNAIRE

Please read each question carefully and make an appropriate response relevant to the "Home Construction Class."

1. Do you feel that the students who can gain the most from this type of class are being enrolled in the class?

   Yes___ Explain_____
   No ___ _____

2. How are students selected for the class?

   a. Student interest _____%
   b. Parent request _____%
   c. Administrative decision _____%
   d. Aptitude _____%
   e. Other reasons _____%

3. Are there any physical requirements for the class?

   Yes____ Explain_____
   No ____

4. Check other areas that have been involved in the Home Construction Program and describe support rendered.

   a. Vocational Drafting____ Support_____
   _____

   b. Business____ Support_____
   _____

   c. Home Econ.____ Support_____
   _____

   d. Vocational Ag.____ Support_____
   _____

   e. Distributive Ed.____ Support_____
   _____

   f. Electronics/Electricity____ Support_____
   _____

   g. Industrial Arts____ Support_____
   _____

   h. Others_____ Support_____
   _____

Vocational Counselor

2017

5. Has the dropout rate in your high school changed since the experimental program began?

____ Not at all
____ To a small degree
____ To a fair degree
____ Significantly

6. Has there been a noticeable difference in the occupational choices of the students since the initiation of the class?

Yes____ Explain_____
No ____ _____

7. Program costs per student:

a. That have completed the course $_____
b. Successfully placed in employment $_____
c. That have enrolled in the course $_____

8. Does the program receive any local donated services or materials?

a. Instructor _____
b. Workers _____
c. Materials donated _____
d. Others _____

9. Has the use of a non-certified instructor (journeyman carpenter) created any problem?

a. With the high school faculty _____
b. Students _____
c. Parents _____
d. Others _____

10. Does this program encounter any additional discipline problems compared to the usual classroom method of instruction?

Yes____ Explain_____
No ____ _____

11. Overall success of program (check one).

____Poor ____Fair ____Good ____ Excellent

12. List any other classes that have been added to the high school curriculum because of this class.

_____
_____

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VT 019 326
LOVELESS, AUSTIN G.; STODDARD, DEVERL
THE STATUS OF THE INTEGRATED AUTOMOTIVE GUIDE PROGRAM WITHIN THE STATE OF UTAH. FINAL REPORT.

UTAH RESEARCH COORDINATING UNIT FOR VOCATIONAL AND TECHNICAL EDUCATION, SALT LAKE CITY.
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ABSTRACT - TO GATHER DATA FOR THE EVALUATION OF THE INTEGRATED SECONDARY, POST-SECONDARY CURRICULUM GUIDE DEVELOPED FOR VOCATIONAL AUTOMOTIVE CLASSES, QUESTIONNAIRES WERE DISTRIBUTED TO 46 UTAH SECONDARY AUTOMOTIVE INSTRUCTORS, AND INTERVIEWS HELD WITH POST-SECONDARY INSTRUCTORS IN FOUR INSTITUTIONS. A REVIEW OF THE FINDINGS REVEALED THAT: (1) THE CURRICULUM GUIDE HAS GENERALLY NOT BEEN ACCEPTED BY HIGH SCHOOL INSTRUCTORS DUE TO THE LACK OF EQUIPMENT, (2) INSTRUCTORS IN THE HIGH SCHOOL PROGRAMS DO NOT GO INTO ENOUGH DEPTH IN ANY AREA OF THE PROGRAM TO ALLOW ARTICULATION AT POST-SECONDARY LEVELS, (3) HIGH SCHOOL INSTRUCTORS GENERALLY DO NOT UNDERSTAND THE TERM ARTICULATION AND HOW IT APPLIES TO THE GUIDE, (4) STUDENT ATTAINMENT COULD NOT BE DETERMINED BECAUSE OF THE NONEXISTENCE OF AN EVALUATION INSTRUMENT. RECOMMENDATIONS INCLUDE: (1) CHANGES SUGGESTED BY INSTRUCTORS SHOULD BE CONSIDERED, (2) MINIMUM EQUIPMENT NEEDS FOR INSTRUCTORS SHOULD BE DEVELOPED, (3) HIGH SCHOOL VOCATIONAL PROGRAMS NEED TO BE GEARED TO VOCATIONAL TRAINING, (4) EFFORTS SHOULD BE MADE TO CLARIFY TERMS USED, (5) EFFORTS SHOULD BE MADE TO SEE THAT ALL INSTRUCTORS RECEIVE A COPY OF THE GUIDE, AND (6) EFFORTS SHOULD BE MADE TO DEVELOP AN EVALUATION INSTRUMENT CAPABLE OF MEASURING STUDENT ATTAINMENT. (SN)

FINAL REPORT

Project No. 603046
Grant No. OEG-4-7-063046-1612

THE STATUS OF THE INTEGRATED AUTOMOTIVE GUIDE PROGRAM WITHIN THE STATE OF UTAH

July 1972

U. S. Department of
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THE STATUS OF THE INTEGRATED AUTOMOTIVE GUIDE PROGRAM WITHIN THE STATE OF UTAH

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2023

THE STATUS OF THE INTEGRATED ARTICULATED AUTOMOTIVE GUIDE PROGRAM WITHIN THE STATE OF UTAH

Background

High school and post-high school instructors in the occupational area of automotive repair and servicing have for several years expressed concern about students being able to move from high school vocational classes into post-high school vocation programs without having to repeat much of the skill training received in high school. In 1969 the Vocational Technical Division of the State Board of Education under the direction of Walter E. Ulrich, Division Administrator and Dave Gailey,Post-high School Coordinator appointed a specialist committee composed of both high school and post-high school instructors to develop a curriculum guide for the automotive program. The members of the curriculum specialist committee included Bennion L. Tueller of Weber State College, Ross S. Fazzio of Utah Technical College of Provo, June A. Black of Utah Technical College of Salt Lake, and Frank Cline of Layton High School.

In 1970, some members of the committee were replaced and another member was added. The present committee consists of: Ralph A. Andersen, Weber State College; Frank L. Cline, Layton High School Davis District; J. Lamar Wright, Utah State University; John E. Cameron Sr., Utah Technical College at Salt Lake; and Richard Rasmussen, Utah Technical College at Provo.

The Curriculum Specialist Committee was given the responsibility of sorting through the body of basic automotive technology and develop a curriculum which would hopefully meet the needs of the automotive program.

This was a preliminary step toward the direction of a total articulation from the high school to the post high school.

As the committee began their efforts they reviewed several sources and guides that had been developed by industry, school districts, universities and college institutions, and individuals.

An advisory council was formed to assist in the selection of course material. Members of the committee included Paul Bingham of Thiokol Training Center, LeGrande Stewart of Stewart Auto Parts, Alma Lund of Rawson and Lund Auto Dealership, Les Boswell of Hinckley's Inc. Auto Dealership, and a representative from International Harvester Co.

The Specialist Committee elected to use the behavioral objective approach or criterion-referenced approach to education in the guide. Members of the committee devoted time to properly acquaint themselves with the writing of objectives as they apply to the automotive area.

Statement of Problem

Many instructional guides are available in automotive which contain numerous teaching techniques for the instructor to follow. The purpose of this research was to gather data for evaluation of the Vocational Automotive, an Integrated Secondary Post-Secondary Curriculum Guide that was developed by the above committee.

Objectives

The specific objectives of this study are:

1. The extent to which the instructors are using the guide.
2. Student reaction to this behavioral objective method of instruction.
3. The extent to which articulation of instruction increased or decreased between the secondary and post-secondary schools since the new guides have been available.

4. Compilation of recommended changes given by the instructors who have used the guide.

5. Compilation of author's titles, and annotations of guides that instructors are using other than the state guide for automotive.

6. The instructor's reasons for not using the state guide and list them in ranked order.

7. The extent to which efficiency and effectiveness of the instruction has increased at the secondary and post-secondary levels since adopting the new guide.

Procedure

The procedure of this study was essentially carried out in five general steps; they were: (1) development of the questionnaire, (2) dissemination and collection of the questionnaire, (3) the tabulation and analysis of the data, (4) interview conducted at post-secondary institutions in the state of Utah, (5) summarizing and reporting of data.

Presentation of Data

The material presented in this section is the tabulation of the questionnaires sent to the secondary vocational automotive instructors in the state of Utah.

Forty-six questionnaires were mailed on January 15, 1972, of which 40 or 87 percent returned completed questionnaires that were usable in this study. Six instructors did not answer the questionnaire. Of the forty instructors responding, three indicated they were not presently teaching vocational automotive classes. Twenty-eight of the 40 instructors who are presently teaching vocational classes have a copy of the state vocational articulated curriculum guide.

Analysis of Data

The instructors were asked to indicate the extent to which they were using the guide. The choices available were (1) completely, (2) partially, (3) not at all. Five instructors indicated they were using the guide completely, while 21 indicated they were using the guide partially. Seven indicated they were not using the guide at all. The instructors' responses are presented in Table 1.

Table 1. Extent the Instructors are Using the Guide.

Instructors' indication of extent of use of the guide	Number responding	Percentage
Using the guide completely	5	12.5
Using the guide partially	21	52.5
Not using the guide at all	7	17.5
No response	7	17.5
Total	40	100.0%

The instructors were asked to indicate the changes that they thought were needed in the guide. The only responses given by the surveyed group were from those instructors using the guide completely. Seven instructors responded with suggested changes as shown in Table 2.

Table 2. List of Compiled Changes that the Instructors Who are Using the Guide Completely Felt Were Needed.

Changes needed	Number Responding
Unit 2 needs to be de-emphasized	1
Unit 4 needs to be emphasized with different types of carburetors covered	1
Unit 5 more depth on systems networks which include Ford, General Motors, and Chrysler systems	
Develop a unit on parts handling and merchandising	1
A yearly updating needed on unit 8	1
Yearly updating on unit 10	1
Orientation and job placement unit needed	1
Body and fender unit needs to be included	1
State safety inspection	1
Parts handling and merchandising	1

Instructors who indicated that they were using the guide partially were asked to list their reasons for not using the guide completely. Fifty-six responses in eight different areas were given, of which one area received eleven responses, two areas received nine responses, while another area received eight responses. (See Table 3)

Table 3. List of Reasons for Not Using the Guide as Given by Instructors Who are Using the Guide Partially.

Reasons listed	Number Responding
Lack enough proper type equipment	11
Guide is written at too high a level for students	9
Students become disinterested through the manner of presentation of material identified in the guide	9
Feel that they have more important material to present that the guide omits	8
Guide is not a complete enough program	4
Do not have enough reference material	4
Think that parts of the guide presently being used are better than the state guide	4
Need more training in the use of behavioral objectives	3

Instructors who indicated they were not using the guide at all were asked to list their reasons for not using the guide. Table 4 presents this material.

Table 4. Reasons Listed by Those Instructors Who are Not Using the Guide at All.

Reasons listed	Number Responding
Informational content of the guide is above what student can achieve	4
Think that the guide I am presently using is better than the state guide	4
Do not know how to use the state guide	3
Lack enough equipment to use the guide	3
Do not have guide	3
Takes too much time	2
All guides are about the same	1

Those instructors who indicated that they were using the guide partially or not at all were asked to list the name of the guide or guides that they were using other than the state guide. The guides are listed in Table 5, as well as the number of instructors who indicated they were using them.

Table 5. List of other guides that are being used by instructors

Title of guide	Partially	Not at all
My own	5	7
Granite School District	3	1
Salt Lake City	2	
Ford Cooperative Program	1	1
Project Success	1	1

Those instructors who used the guide completely rated the guide in this fashion: five felt the guide was excellent, which includes all those who used it completely. This same group was asked to compare the previous guide or program they were using to the present program where the guide outlines the work load. Three indicated that their program is now easier to teach; two indicated that the program now is more difficult to teach.

The instructors were asked to indicate whether the students who successfully completed their program were able to gain entry level jobs. Two instructors who use the guide completely indicated their students were gaining entry level jobs, while two instructors indicated they were not sure, and one instructor did not respond to this question. Of those instructors using the guide partially, thirteen indicated their students were gaining entry level jobs. Of this grou- seven instructors indicated that their students were not gaining entry level jobs. Five instructors who did not use the guide indicated that their students were able to gain entry level jobs while only one of this group stated that his students were not able to obtain jobs in the field. Ten instructors did not respond to this question.

In responding to the question asked about students completing their program being able to enroll in a post-secondary high school vocational automotive program at an advanced standing, 17 or 47 percent of the instructors teaching vocational classes in automotive responded to this question. Table 6 presents this information as well as instructors' responses to entry level jobs.

Table 6. Instructors' Indication of the Status of Students Who Complete Their Programs as Far as Job Placement and Advanced Standing in Post-Secondary Institutions.

Instructors' indication	Number of programs where students are gaining advanced placement	Number of programs where students are gaining entry level jobs
Using the guide completely	3	2
Using the guide partially	10	13
Not using the guide at all	3	5
No response	14	17
Total	40	40

Interviews with Post-Secondary Institutions

The interviews of the post-secondary institutions in Utah included: Utah Technical College at Provo; Utah Technical College at Salt Lake; Weber State College at Ogden; and Utah State University at Logan. Mr. Fazzio at Utah Technical College, Provo indicated that due to the depth of study of their automotive program it was not feasible to offer advanced standing to students which had the limited background offered by the guide.

Mr. Thompson, at Utah Technical College, Salt Lake indicated the same feeling as at Provo--students do not have enough depth to be advanced. Mr. Thompson also indicated that due to lack of proper testing techniques and tests, it was most difficult to evaluate a student on the post-high school level of knowledge in the depth areas.

Prof. Andersen, at Weber State College was most enthusiastic about articulation, and had made preparations for articulation in his automotive program; as of yet he has not received students from high schools who are using the guide.

Prof. Wright, at Utah State University indicated that one student had been enrolled into the program there. Due to the lack of proper testing techniques, however, this student did not enroll in advanced courses and was enrolled in the regular program.

At the time of the survey, two of the four institutions have made plans and preparations for articulation at advanced standing for students that are properly prepared but lack a good evaluation test to determine if the student can achieve.

Only one student has enrolled into the automotive programs of the four institutions interviewed where the articulated guide was used in the high school program.

Summary of Findings

The state of Utah under the direction of Dr. Gailey and Mr. Ulrich of the Vocational-Technical Division of the State Board of Education appointed a Specialist Committee to develop a curriculum guide for the automotive program. The committee began their work in 1969 summer workshops and have continued each summer since to improve and change needed areas of the guide.

The purpose of this study was to determine the status of the automotive curriculum guide. The extent to which it is being used, if articulation has occurred at post-secondary institutions, compile suggested changes given by instructors using the guide, list other guides that are being used instead of the state guide, and determine reasons why instructors have not adopted the state guide.

The procedure for this study was carried out in five general steps. They were: development of the questionnaire, dissemination and collection of questionnaires, the tabulation and analysis of the data, interview

conducted at post-secondary institutions, and finally the summarizing and reporting of data.

The data reported in this study were obtained from 40 instructors who were teaching vocational automotive classes in the high schools in the state of Utah.

The following generalizations were drawn from the findings in this study:

Findings concerning the instructors

1. Five instructors were using the guide completely, while 21 instructors used the guide partially. Seven do not use the guide at all.

2. Instructors suggested ten changes that need to be made in the guide. Each of the ten instructors suggested a different change.

3. The major reasons given by instructors for not using the guide completely were: lack of equipment, guide is written at too high a level for students, students lose interest, and instructors have more important things to teach.

4. Other guides are being used in the high schools by instructors. These include Granite School District, Ford Coop program, and Project Success.

5. High school instructors indicate that students graduating from their programs are gaining advanced standing in post-secondary institutions.

Findings from the Post-Secondary Institutions

1. In interviews with automotive supervisors at the post-high school institutions, only one indicated admitting a student at an advanced standing from a high school using the automotive guide. The people interviewed at the other three stated that to the best of their knowledge no students from any high school had been admitted at an advanced standing.

2. Two of the four post-secondary institutions are prepared to grant advanced standing to students who are properly prepared and can be evaluated.

Conclusions

Based upon the results of this study, the writer believes that the following conclusions can be drawn:

The articulated curriculum guide for automotive has not generally been accepted by the high school instructors.

A lack of equipment in the automotive classes appear to be the major reason for not using the guide.

Instructors in the high school programs do not go into enough depth in any area of the automotive program to allow articulation at post-secondary levels.

Articulation has not as yet occurred at the post-secondary level.

High school instructors do not understand the term articulation and how it applies to the guide.

An evaluation instrument did not exist at the time of the survey that would determine the level of achievement a student has attained.

Recommendations

Changes suggested by instructors need to be considered by the curriculum committee.

Minimum equipment needs for instructors should be developed.

Vocational programs in high school need to be geared to vocational training, not just an overview of the industry.

Efforts should be made to insure the term articulation is understood, and how it applies to students being taught on the high school level.

Effort should be made to see that all instructors receive a copy of the guide.

Efforts are needed to develop a test or evaluation instrument that will measure the level of achievement a student has attained, and can be accepted by the high school and post-secondary institutions.

APPENDIX

List of Post-Secondary Institutions Involved in the Study

Utah Technical College at Provo, Utah.

Utah Technical College at Salt Lake City, Utah.

Weber State College at Ogden, Utah.

Utah State University at Logan, Utah.

Interview Schedule of Post-Secondary Institutions

Date	Institution	Person Interviewed
1 March 1972	Utah Technical College Provo, Utah	Ross Fazzio
1 March 1972	Utah Technical College Salt Lake City, Utah	Clair Thompson
7 March 1972	Weber State College Ogden, Utah	Ralph Andersen
7 March 1972	Utah State University Logan, Utah	LaMar Wright

UTAH STATE BOARD OF EDUCATION

1400 UNIVERSITY CLUB BUILDING, 136 EAST SOUTH TEMPLE STREET
SALT LAKE CITY, UTAH 84111

WALTER D. TALBOT, STATE SUPERINTENDENT OF PUBLIC INSTRUCTION

January 14, 1972

Dear Automotive Instructor:

Two years have passed since the Vocational Automotive, Integrated Secondary and Post Secondary guide has been available for use by the automotive teachers of the state.

We feel there is a need to evaluate this guide prior to further revisions. You, as an automotive instructor, are the most knowledgeable concerning the usefulness and value of this guide.

We are asking you to respond to the enclosed questionnaire. Please take the five or ten minutes necessary to respond and return it to me in the enclosed stamped, self-addressed envelope today.

Thank you for your cooperation.

Sincerely,

Garth A Hill

GARTH A. HILL, Specialist
Trade & Industrial Education

/ks

Enclosure

VAUGHN L. HALL, Deputy Superintendent
Office of Adult, Vocational, and Rehabilitation Services

WALTER E. ULRICH, Administrator
Division of Vocational and Technical Education
Telephone (801) 328 5371

UTAH STATE VOCATIONAL AUTOMOTIVE
SECONDARY - POST SECONDARY CURRICULUM GUIDES
QUESTIONAIRE

Please read each question carefully and make an appropriate response.

1. Are you presently teaching vocational automotive classes?

   Yes _____
   No _____

2. If you do not teach vocational automotive class or classes, go no further. Return this questionaire.

3. Do you have a copy of the Utah State Vocational Automotive Secondary - Post Secondary Curriculum Guide?

   Yes _____
   No _____

4. To what extent do you use the state vocational guide?

   Partially _____ For how many years? _____
   Completely _____ For how many years? _____
   Not at all _____

   If you do not use the guide, go to SECTION I.
   If you use the guide partially, go to SECTION II.
   If you use the guide completely, go to SECTION III.

SECTION I
(Not using guide)

Please indicate why you are not using the guide. Check all appropriate.

I. ___ A. The guide is not a complete enough program.

___ B. Informational content of the guide is above what students can achieve.

___ C. The guide is written at too low a level for my students.

___ D. The guide does not fit my way of teaching.

___ E. Do not know how to use the state guide.

___ F. Do not have reference material to use the guide.

___ G. Lack enough equipment to use the guide.

___ H. Lack proper type of equipment to use the guide.

___ I. Feel that I have more important materials to present that the guide omits.

___ J. Think that the guide I am using is better than the state guide.

___ K. Do not like to teach using behavioral objective techniques.

___ L. Other reasons. _____

_____

_____

II. A. Did you develop the guide you are presently using?

Yes _____
No _____
Partially _____
If you did not, list the name of the guide you are using.

_____

GO TO SECTION IV

SECTION II
(Partially)

Please indicate why you have not adopted the State Vocational Automotive Guide completely. Check all that apply.

I. ___ A. The guide is not a complete enough program.

___ B. Informational content of the guide is above what students can achieve.

___ C. Guide is written at too high a level for my students.

___ D. Guide is written at too low a level for my students.

___ E. Students become disinterested in the guide.

___ F. Do not have enough reference material to adequately use the guide.

___ G. Lack enough equipment to adequately use the guide.

___ H. Lack proper types of equipment to adequately use the guide.

___ I. Feel that you have other more important materials to present that the guide omits.

___ J. Think that the guide I am presently using is better than the state guide. Please list the name of the guide you are using.

_____

___ K. Do not like to teach using behavioral objectives.

___ L. Other reasons. _____

_____

_____

II. A. Do you think the guide has enriched students in all academic subjects?

Yes _____
No _____
Please comment. _____

_____

_____

GO TO SECTION IV

SECTION III
(Completely)

1. Rate your satisfaction with the results obtained through the use of the guide.

   Excellent _____ Fair _____
   Good _____ Poor _____

2. Please indicate the areas of the guide in which changes need to be made, if any.

   None _____
   Change _____
   _____

3. In your opinion, rate the differences between the state vocational guide and the guide you previously used.

   The state vocational guide is:
   Better _____ Not as good _____
   Equivalent _____ Very poor _____

4. Compared to my previous program's work load, the new vocational guide is:

   Easier to teach _____
   More difficult to teach _____
   Less difficult to teach _____

5. Do you think the guide has enriched students in all academic subjects?
   _____
   _____
   _____

SECTION IV

1. Have students that have successfully completed your class been able to enroll in a post high school vocational automotive program at an advanced standing?

   Yes _____
   No _____

2. Have students that have successfully completed your class been able to obtain entry level jobs in this field?

   Yes _____
   No _____

VT 019 380

VT 019 380
IDAHO STATE BOARD OF NURSING ANNUAL REPORT: JULY 1, 1971 TO JUNE 30, 1972.

IDAHO STATE BOARD OF NURSING, BOISE.
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IDENTIFIERS - *IDAHO

ABSTRACT - PRESENTED IN THIS PUBLICATION ARE SOME MAJOR HIGHLIGHTS OF NURSING PROGRAMS IN THE STATE OF IDAHO FOR THE 1971-1972 YEAR. INCLUDED ARE: (1) A SUMMARY OF THE ACTIVITIES UNDERTAKEN OR ENGAGED IN BY THE BOARD OF NURSING AND ADVISORY COUNCIL OF LICENSED PRACTICAL NURSES, (2) A REVIEW OF THE NURSING EDUCATION PROGRAMS IN REGARD TO ENROLLMENT, GRADUATION, AND EXAMINATION DATA, (3) AN ACCOUNTING OF FUNDS USED DURING THE YEAR, AND (4) LICENSURE AND EMPLOYMENT STATISTICS OF REGISTERED AND LICENSED PRACTICAL NURSES RESIDING IN IDAHO. (SN)

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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IDAHO STATE BOARD OF NURSING

ANNUAL REPORT

JULY 1, 1971
TO
JUNE 30, 1972

"...Nursing leadership must reorient itself and restructure itself in such a way that nursing education and practice are inseparable, are symbolic, and are united in purpose..."

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2642

COVER QUOTATION:

AYDELOTTE, MYRTLE K., "Nursing Education and Practice: Putting It All Together." McGraw-Hill Book Company, *The Journal of Nursing Education*, 11:4:21, November 1972

SHOULD YOU WHISTLE WHILE YOU WORK?

There is a Russian fable that bears repeating at this time:

> *An old Russian peasant was going along the road one very cold morning, when he saw a bird lying on the ground. At first, he thought it was dead, but when he picked it up, he felt a faint heartbeat.*
>
> *He tried to revive the bird by blowing on it and putting it under his sheepskin coat, but to no avail.*
>
> *He was about to throw it away, when he chanced upon a cow that had just dropped a large pancake of hot manure. The peasant buried the bird in the manure up to its little beak and went on his way. After a time, the hot manure did its work and the bird revived.*
>
> *When it revived, it began to sing. A wolf heard it singing, pulled it out and ate it.*

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That is the end of the story, but - remember - most Russian stories have a moral. This one, in fact, has three.

First moral: Whoever puts you in it is not necessarily your enemy.
Second moral: Whoever takes you out of it is not necessarily your friend.
Third, and most important, moral: If you are up to your neck in it, don't sing!

And so, this issue of the Annual Report is dedicated to the Idaho nurses, who are struggling, silently, to work through the morass of studies, recommendations, and changes in which they find themselves embedded.

BOARD MEMBERS AND PERSONNEL

BOARD OF NURSING	TERM EXPIRES
Sister Mary Agnes Reichlin, R.N. President Director of Nursing St. Mary's Hospital, Cottonwood	4-1-75
Doris A. Kelly (Mrs. James), R.N. Vice President Assistant Professor in Nursing Boise State College, Boise	4-1-74
Mrs. Michiko Kondo, R.N. Secretary-Treasurer Public Health Nurse, Panhandle District Health Department, Priest River	4-1-73
Mrs. June R. Penner, R.N. Member Nurse Coordinator Public Health Nursing Project Idaho State University, Boise	4-1-75
Miss Barbara Quirl, R.N. Member Instructor in Nursing Ricks College, Rexburg	4-1-74

ADVISORY COUNCIL OF LICENSED PRACTICAL NURSES	
Faye B. Gardner (Mrs. Maurice), L.P.N. Staff Nurse State Hospital South, Blackfoot	4-1-75
Grace E. Holton (Mrs. Lawrence), L.P.N. Staff Nurse Caldwell Memorial Hospital, Caldwell	4-1-73
Mrs. Grayce E. Painter, L.P.N. Staff Nurse St. Joseph's Hospital, Lewiston	4-1-74

STAFF	EMPLOYED
Miss Marjorie E. Schlotterbeck, R.N. Executive Director and Educational Consultant	8-11-61
Miss V. Maxine Horsley Administrative Assistant	7-10-51
Miss Margaret J. Johnson Senior Clerk Typist	4-19-65
Miss Elizabeth Erickson Senior Clerk Typist	8-1-71
Linda H. Coley (Mrs. Ronald) Senior Clerk Typist	9-11-72

TERM EXPIRATIONS	DATE
Betty B. Evenson (Mrs. Nephi), R.N. Member, Board of Nursing Pocatello	4-1-72

MID-TERM RESIGNATIONS	
Mrs. Anne I. Peterson, L.P.N. Member, Advisory Council Bonners Ferry	4-15-72

STAFF RESIGNATIONS	
Mrs. Frances N. Rawlins Senior Clerk Typist	9-8-72

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ACTIVITIES OF THE BOARD OF NURSING, AND THE
ADVISORY COUNCIL OF LICENSED PRACTICAL NURSES

During the fiscal year, July 1, 1971 - June 30, 1972, the Board of Nursing and Advisory Council of Licensed Practical Nurses convened for a total of 19 days. In addition, individual Board and Advisory Council members spent a total of 18 days attending special meetings and in sub-committee activities.

Among many actions taken during 1971-72 the Board:

--Approved microfilming supporting documents for approximately 2,500 licenses issued since 1966 - 6 to 7 pieces of paper per license.

--Set policy for refunding fees paid for a license. The only fees to be refunded are those for incomplete applications.

--Authorized employment of a third senior clerk typist.

--Withdrew practical nurse students from a nursing home because of intolerable conditions. Reported the action to the Department of Environmental Protection and Health and the Department of Social and Rehabilitative Services.

--Authorized the executive director to accept the invitation from the Alaska and Hawaii Boards of Nursing to serve as a consultant for the purpose of surveying schools of nursing.

--Gave continued accreditation to schools of nursing, following review of annual reports.

--Approved eleven practical nurse programs.

--Met with representatives of the Idaho State Student Nurse Association relative to establishing guidelines for summer work. The Board provided the students with information from other states and asked them to develop the first draft of guidelines for Idaho.

--Reviewed drafts of proposed questions for the professional and practical nurse test pool examination, and made recommendations for each question.

--Appointed Barbara Quirl and Betty Evenson as an ad hoc committee to formulate revisions of the Criteria for the Education of Professional nurses in Idaho.

--Conducted hearings for revision of the Criteria for the Education of Professional Nurses and the Criteria for the Education of Practical Nurses.

--Adopted rules and regulations for the expanding role of the nurse developed under the 1971 amendment to the Nurse Practice Act, and mailed copies to all licensed nurses, physicians and hospital administrators.

--Certified 7 nurse practitioners in the following areas: surgical nurse practitioner, emergency nurse practitioner, respiratory nurse specialist, pediatric nurse practitioner, and 3 family nurse practitioners.

--Handled 8 disciplinary problems.

--Denied licensure to 3 waiver licensed practical nurses from other states.

--Approved the 1973-74 budget with the addition of one professional staff member.

NURSING EDUCATION PROGRAMS

Graduates of accredited educational units in professional nursing are eligible for admission to the State Board Test Pool Examination.

BACCALAUREATE DEGREE PROGRAMS
Four academic years and one summer

IDAHO STATE UNIVERSITY, Department of Nursing
Pocatello, Idaho
Established - 1952
Accreditation - National League for Nursing

ASSOCIATE DEGREE PROGRAMS
Two academic years and one summer

BOISE STATE COLLEGE, Department of Nursing
Boise, Idaho
Established - 1957
Accreditation - National League for Nursing

COLLEGE OF SOUTHERN IDAHO, Department of Nursing
Twin Falls, Idaho
Established - 1971

LEWIS-CLARK STATE COLLEGE, Division of Nursing
Lewiston, Idaho
Established - 1966
Accreditation - National League for Nursing

NORTH IDAHO COLLEGE, Division of Nursing
Coeur d'Alene, Idaho
Established - 1970

RICKS COLLEGE - Department of Nursing
Rexburg, Idaho
Established - 1957
Accreditation - National League for Nursing

The following are among the agencies that cooperate with Idaho schools of nursing to provide clinical experience for students:

Bannock Memorial Hospital, Pocatello
St. Anthony Community Hospital, Pocatello
State Hospital South, Blackfoot
St. Luke's Hospital, Boise
St. Alphonsus Hospital, Boise
Veterans Administration Hospital, Boise
St. Joseph's Hospital, Lewiston
Tri-State Memorial Hospital, Clarkston, Washington
State Hospital North, Orofino
Idaho Falls L.D.S. Hospital, Idaho Falls
Sacred Heart Hospital, Idaho Falls
Madison Memorial Hospital, Rexburg
Kootenai Memorial Hospital, Coeur d'Alene
Elk's Hospital and Rehabilitation Center, Boise
Magic Valley Memorial Hospital, Twin Falls
Twin Falls Hospital and Clinic, Twin Falls
Cassia Memorial Hospital, Burley
St. Benedict's Hospital, Jerome
Eastgate Nursing Home, Pocatello
Orchards Nursing Home, Lewiston
Sunset Terrace Nursing Home, Coeur d'Alene
Pinewood Manor Nursing Home, Coeur d'Alene
Treasure Valley Manor Nursing Home, Boise
Boise Convalescent Center, Boise
Southeastern District Health Dept., Pocatello
Central District Health Dept., Boise
North Central District Health Dept., Lewiston
Panhandle District Health Dept., Coeur d'Alene
Dist. #7 Health Dept., Idaho Falls
Southcentral Health Dept., Twin Falls
Kindergartens
Elementary and junior high schools
Doctors' offices
Industrial plants
Agencies for the mentally retarded

Forty-three percent of the graduates of Idaho schools of professional nursing have left the state over the past ten years. However, it is interesting to note that the percentage rate has dropped over the past three years. Following is a table showing this loss rate.

YEAR	NUMBER GRADUATED	NUMBER LEAVING STATE	PERCENT LEAVING STATE
62-63	55	37	68%
63-64	69	46	67%
64-65	73	39	53%
65-66	67	30	49%
66-67	61	23	38%
67-68	89*	45	57%
68-69	101	47	46%
69-70	98	32	33%
70-71	96	32	33%
71-72	115	30	26%
TOTAL	824	361	43%

*11 did not respond to the questionnaire

The major reasons given for leaving the state were:

1. Family out of state
2. To continue education
3. For more varied experience
4. Travel
5. Better opportunities and salary

Practical nurse programs in Idaho are operated under the State Board for Vocational Education, Trade, Industrial and Technical Division, Health Occupations Education, through local educational agencies or colleges. Hospitals used for clinical experience are approved annually by the State Board of Nursing. Graduates of these approved one year programs are eligible for admission to the practical nurse State Board Test Pool Examination. The following programs were approved for 1971-72.

Blackfoot. . . .School District #55
Bingham Memorial Hospital
Boise. . . . . .Boise State College
St. Luke's Hospital
St. Alphonsus Hospital
Veterans Administration Hosp.
Burley . . . . .School District Joint #151
Cassia Memorial Hospital
Caldwell . . . .School District #132
Caldwell Memorial Hospital
Coeur d'Alene. .North Idaho College
Kootenai Memorial Hospital
Emmett . . . . .School District #221
Walter Knox Memorial Hospital
Idaho Falls. . .Eastern Idaho Vocational School
Idaho Falls L.D.S. Hospital
Sacred Heart Hospital
Lewiston . . . .Lewis-Clark State College
St. Joseph's Hospital
Nampa. . . . . .School District #131
Mercy Hospital
Pocatello. . . .Idaho State University
Bannock Memorial Hospital
St. Anthony Community Hospital
Twin Falls . . .College of Southern Idaho
Magic Valley Memorial Hospital

ENROLLMENT IN IDAHO SCHOOLS OF NURSING
As of November 21, 1972

SCHOOLS	TOTAL ENROL-MENT	FRESH-MEN	SOPHO-MORES	JUNIORS	ASSOC. AND BACC. DEG. SENIORS 1973	GRADU-ATED 1972	TOTAL FACULTY INCLDG. DIRECTORS
Boise State College	217	93			124	54	10 Bacc. FT 4 Bacc. PT 8 Mast. FT
College of Southern Idaho	101	39			62		7 Bacc. FT 2 Mast. FT
Idaho State University	128	*	31	46	51	13	2 Bacc. PT 17 Mast. FT 1 Mast. PT
Lewis-Clark State College	66	28			38	22	2 Bacc. FT 2 Bacc. PT 4 Mast. FT
North Idaho College	67	20			47	13	3 Bacc. FT 3 Mast. FT 1 Mast. PT
Ricks College	101	39			62	29	1 Dip. PT 1 A.D. PT 5 Bacc. FT 2 Bacc. PT 2 Mast. FT
TOTALS	680	219	31	46	384	131	

*Students are not admitted to the nursing education program until the sophomore year.

EXAMINATION DATA

A comparison of the standard score means achieved by candidates who have written the State Board Test Pool Examination for original licensure in Idaho with the national standard score means. The minimum passing standard score is 350 in each of the areas of the examination.

PROFESSIONAL NURSES

PERIOD OF TIME COVERED	STANDARD SCORE MEANS: MEDICAL NURSING IDA	MEDICAL NURSING NAT	SURGICAL NURSING IDA	SURGICAL NURSING NAT	OBSTETRICAL NURSING IDA	OBSTETRICAL NURSING NAT	NURSING OF CHILDREN IDA	NURSING OF CHILDREN NAT	PSYCHIATRIC NURSING IDA	PSYCHIATRIC NURSING NAT	NUMBER WRITING	FAILURES NUM.	FAILURES %
10-1-62 9-30-63	* 495	526	540	533	536	529	523	520	* 520	536	53	4	8%
10-1-63 9-30-64	* 466	514	* 495	507	519	516	* 488	516	* 501	513	66	13	20%
10-1-64 9-30-65	* 504	519	518	516	* 513	518	526	526	531	520	73	10	13%
10-1-65 9-30-66	* 521	522	* 494	509	* 500	511	516	511	521	515	72	7	10%
10-1-66 5-31-67	No Candidates**												
6-1-67 5-31-68	* 509	528	* 518	524	524	511	525	521	* 499	526	65	9	13%
6-1-68 5-31-69	* 500	514	* 512	517	* 506	515	519	518	* 498	519	90	13	14%
6-1-69 5-31-70	533	523	533	524	529	517	* 507	521	524	512	111	18	16%
6-1-70 5-31-71	* 501	521	529	517	545	534	* 513	517	535	514	96	12	13%
6-1-71 5-31-72	* 480	512	* 491	517	* 497	512	* 497	518	* 501	521	136	28	21%

PRACTICAL NURSES

PERIOD OF TIME COVERED	S. S. MEANS IDA	S. S. MEANS NAT	NUMBER WRITING	FAILURES NUM	FAILURES %
10-1-62 9-30-63	518	509	159	8	5%
10-1-63 9-30-64	533	509	137	5	4%
10-1-64 9-30-65	556	506	141	2	1%
10-1-65 9-30-66	559	514	151	4	3%
10-1-66 9-30-67	539	513	122	1	1%
10-1-67 9-30-68	547	516	141	3	2%
10-1-68 9-30-69	+ 571	508	138	0	0
10-1-69 9-30-70	553	507	144	2	1%
10-1-70 9-30-71	552	513	159	2	1%
10-1-71 9-30-72	563	516	191	6	3%

*Indicates scores lower than the national average

**This is a short period of time caused by a change in reporting dates. We did not have a scheduled examination fall within this period.

+Idaho ranked first in the nation with this score.

STATEMENT OF FUND OPERATION

July 1, 1971 to June 30, 1972

FUND BALANCE - As of June 30, 1971		-$ 48,944.11
ADD RECEIPTS - to June 30, 1972		
Renewal Fees	-$ 68,915.00	
Examination Fees	17,855.00	
Endorsement Fees	14,645.00	
Temporary Permit Fees	1,280.00	
Reinstatement Fees	2,315.00	
Other	1,156.41	
Total Receipts		-$106,166.41
TOTAL FUNDS AVAILABLE		-$155,110.52
LESS DISBURSEMENTS - to June 30, 1972		
Salaries and Wages	-$ 40,453.00	
Travel	6,771.73	
Other Expense	27,069.15	
Capital Outlay	1,926.10	
Refunds	225.00	
Sub-total Disbursements		-$ 76,444.98
Social Security	-$ 1,733.99	
Transfers to General Fund	1,839.48	
Sub-total Disbursements		-$ 3,573.47
Total Disbursements		-$ 80,018.45
FUND BALANCE - As of June 30, 1972		-$ 75,092.07

2055

HIGHLIGHTS

--123 professional nurses reinstated their licenses during this fiscal year, an increase of 54 over the previous year.

--Of those residing in Idaho, there was an increase of 68 professional nurses and an increase of 51 practical nurses unemployed.

--During the same registration period, 7 practical nurse licensees left the work force. All waiver licenses were issued prior to 1951.

--The number of professional and practical nurses endorsed from Idaho to other states has increased by 2 and decreased by 20 respectively, or totals of 140 and 74; with endorsement to Idaho increasing by 44 professional nurses and 9 licensed practical nurses.

--81% of the professional nurses and 75% of the practical nurses are married.

--Of the number of professional nurses licensed and residing in Idaho graduates of diploma schools have decreased by 22; associate degree graduates have increased by 89; and baccalaureate degree graduates have increased by 56.

--The number of professional nurses employed in Idaho has increased by 45 with an increase of 97 employed practical nurses since the 1970-71 report.

--Over a ten year period, 43% of the new graduates of Idaho's professional schools of nursing have been endorsed out of state. However, it is encouraging to note that the percentage has been decreasing for the past three years.

--There are two items of current interest which are not reflected in this report. Since the end of the fiscal year:
1. There have been 205 registered nurses and 79 licensed practical nurses licensed in Idaho by interstate endorsement.
2. The Board of Nursing has certified seven nurse practitioners: 1 surgical nurse practitioner, 1 emergency nurse practitioner, 1 respiratory nurse specialist, 1 pediatric nurse practitioner, 1 family nurse clinician, and two nurse practitioners.

2056

LICENSURE RENEWAL AND ORIGINAL REGISTRATION

Showing the total number of licenses renewed and reinstated annually for the renewal period July 1 - June 30 of the years given.

PROFESSIONAL NURSES			
RENEWAL PERIOD	RENEWAL	REIN-STATE	TOTAL
1960-61	3477	88	3565
61-62	3546	99	3645
62-63	3649	83	3732
63-64	3708	117	3825
64-65	3851	92	3943
65-66	3762	82	3844
66-67	3759	145	3904
67-68	3711	122	3833
68-69	3886	143	4029
69-70	4022	124	4146
70-71	4209	69	4278
71-72	4040	123	4163

PRACTICAL NURSES			
RENEWAL PERIOD	RENEWAL	REIN-STATE	TOTAL
1960-61	1511	50	1561
61-62	1608	41	1649
62-63	1695	39	1734
63-64	1801	52	1853
64-65	1931	36	1967
65-66	1991	58	2049
66-67	2077	65	2142
67-68	2163	70	2233
68-69	2238	69	2307
69-70	2338	82	2420
70-71	2460	67	2527
71-72	2481	63	2544

Showing the total number of original licenses issued professional and practical nurses by waiver, examination, and interstate endorsement.

PROFESSIONAL NURSES				
RENEWAL PERIOD	WAIVER	EXAMI-NATION	ENDORSE-MENT	TOTAL
1911-62	176	3294	3261	6731
62-63		85	149	234
63-64		61	183	244
64-65		73	159	232
65-66		66	186	252
66-67		67	197	264
67-68		62	208	270
68-69		93	196	289
69-70		102	234	336
70-71		103	211	314
71-72		130	255	385
TOTAL	176	4136	5239	9551

PRACTICAL NURSES				
RENEWAL PERIOD	WAIVER	EXAMI-NATION	ENDORSE-MENT	TOTAL
1948-62	287	2015	112	2414
62-63		158	29	187
63-64		137	41	178
64-65		172	33	205
65-66		141	48	189
66-67		139	45	184
67-68		121	39	160
68-69		161	43	204
69-70		130	78	208
70-71		171	62	233
71-72		153	73	226
TOTAL	287	3498	603	4388

COMPARISON OF NURSES ENDORSED TO AND FROM IDAHO BY STATE

STATE	ENDORSED TO IDAHO FROM OTHER STATES		ENDORSED FROM IDAHO TO OTHER STATES	
	R.N.	L.P.N.	R.N.	L.P.N.
Alabama				
Alaska	1	1	4	1
Arizona	1	2	6	3
Arkansas	1	1		1
California	43	8		7
Colorado	10	1	13	2
Connecticut	5		1	
Delaware	3			
Dist. of Col.				
Florida	3			
Georgia	1	1	1	2
Hawaii	1		1	3
Illinois	14	1	4	1
Indiana	1	2	1	
Iowa	7			
Kansas	2	1	4	1
Kentucky			2	
Louisiana	2	1	1	
Maine			1	
Maryland	2			1
Massachusetts	5	2	2	
Michigan	3		1	
Minnesota				
Mississippi				
Missouri				
Montana				
Nebraska				
Nevada			5	3

SUMMARY OF NURSES ENDORSED IN AND OUT OF IDAHO FOR THE FISCAL YEAR ENDING JUNE 30,

R.N.

	IN	OUT
1963	149	108
1964	183	132
1965	159	110
1966	186	155
1967	193	199
1968	208	156
1969	106	160
1970	238	175
1971	211	138
1972	255	140

L.P.N.

	IN	OUT
1965	33	67
1966	48	74
1967	48	90
1968	39	86
1969	42	93
1970	78	101
1971	64	94
1972	73	74

STATE	ENDORSED TO IDAHO FROM OTHER STATES		ENDORSED FROM IDAHO TO OTHER STATES	
	R.N.	L.P.N.	R.N.	L.P.N.
New Hampshire				
New Jersey	3	1	1	
New Mexico			2	2
New York	4	2	2	1
North Carolina	2			
North Dakota	2	1	1	
Ohio	5	1		
Oklahoma			1	
Oregon	16	10	12	6
Pennsylvania	11		1	
Rhode Island				
South Carolina			1	2
South Dakota	1	3	1	
Tennessee	2			
Texas	2	2	6	4
Utah	15	2	16	9
Vermont				
Virginia	2		2	1
Washington	30	23	33	18
West Virginia	2			
Wisconsin	3	1	2	
Wyoming	2		5	1
Canada	9		3	
TOTAL	255	73	140	74

The number of professional nurses leaving Idaho has increased by 2, and the number coming to Idaho has increased by 44 in the past year. The number of practical nurses leaving Idaho has decreased by 20 and the number coming to Idaho has increased by 9.

NURSES REGISTERED IN IDAHO
Classified by
REGISTRATION STATUS, LOCATION, AND ACTIVITY STATUS
July 1, 1971 - June 30, 1972

LOCATION AND ACTIVITY STATUS	REGISTERED NURSES					PRACTICAL NURSES				
		REGISTRATION STATUS					REGISTRATION STATUS			
	TOTAL	RENEWAL	REIN-STATE MENT	EXAMI-NATION	ENDORSE MENT	TOTAL	RENEWAL	REIN-STATE MENT	EXAMI-NATION	ENDORSE MENT
LOCATED IN STATE										
Employed in Nursing	2,450	2,181	69	97	103	1,864	1,662	31	141	30
Full Time	1,609	1,393	46	88	82	1,379	1,213	19	123	24
Part Time	841	788	23	9	21	485	449	12	18	6
Employed Outside Nursing	85	80	3	0	2	80	77	2	1	0
Not Employed	877	760	25	16	76	445	395	16	6	28
TOTAL	3,412	3,021	97	113	181	2,389	2,134	49	148	58
LOCATED OUT OF STATE										
Employed in Nursing	740	647	15	16	62	220	197	8	3	12
Full Time	575	494	12	15	54	172	151	7	3	11
Part Time	165	153	3	1	8	48	46	1	0	1
Employed Outside Nursing	31	29	1	0	1	31	29	2	0	0
Not Employed	365	343	10	1	11	130	121	4	2	3
TOTAL	1,136	1,019	26	17	74	381	347	14	5	15
GRAND TOTAL	4,548	4,040	123	130	255	2,770	2,481	63	153	73

2659

NURSES REGISTERED AND EMPLOYED OR RESIDENT IN IDAHO
Classified by
FIELD OF EMPLOYMENT AND SEX
July 1, 1971 -- June 30, 1972

FIELD OF EMPLOYMENT	REGISTERED NURSES			PRACTICAL NURSES		
		SEX			SEX	
	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE
EMPLOYED IN NURSING						
Hospital or Institution	1,636	31	1,605	1,350	15	1,335
Nursing Home	210	4	206	251		251
Professional School of Nsg.	49	1	48			
Practical Nurse Program	26		26			
Private Duty	24		24	48	1	47
Public Health	103	2	101	32	2	30
School Nurse	63		63	2	1	1
Industrial Nurse	35	1	34	9		9
Office Nurse	248		248	132		132
Other	56	8	48	40		40
EMPLOYED OUTSIDE NURSING	85	9	76	445	3	442
NOT EMPLOYED	877	4	873	80	7	73
TOTAL	3,412	60	3,352	2,389	29	2,360

0932

NURSES REGISTERED AND EMPLOYED OR RESIDENT IN IDAHO
Classified by
FIELD OF EMPLOYMENT AND MARITAL STATUS
July 1, 1971 - June 30, 1972

FIELD OF EMPLOYMENT	REGISTERED NURSES					PRACTICAL NURSES				
		MARITAL STATUS					MARITAL STATUS			
	TOTAL	SINGLE	MAR'D	WIDOW	DIV-SEP	TOTAL	SINGLE	MAR'D	WIDOW	DIV-SEP
EMPLOYED IN NURSING										
Hospital	1,636	205	1,284	62	85	1,350	130	955	126	139
Nursing Home	210	6	164	26	14	251	12	191	24	24
School of Nursing	49	10	33	1	5					
Practical Nurse Program	26	1	21	2	2					
Private Duty	24		17	6	1	48	2	33	8	5
Public Health	103	12	84	3	4	32	1	20	4	7
School Nurse	63	2	53	7	1	2		2		
Industrial Nurse	35	1	27	4	3	9		7	2	
Office Nurse	248	17	208	10	13	132	4	109	9	10
Other	56	8	36	6	6	40		32	5	3
EMPLOYED OUTSIDE NURSING	85	18	55	7	5	80	5	64	4	7
NOT EMPLOYED	877	41	775	39	22	445	8	373	45	19
TOTAL	3,412	321	2,757	173	161	2,389	162	1,786	227	214

81% of the registered nurses and 75% of the practical nurses employed are married.

2031

NURSES REGISTERED AND EMPLOYED OR RESIDENT IN IDAHO
Classified by
ACTIVITY STATUS, MARITAL STATUS, AND AGE
July 1, 1971 - June 30, 1972

MARITAL STATUS and ACTIVITY	REGISTERED NURSES AGE IN YEARS							PRACTICAL NURSES AGE IN YEARS						
	TOTAL	20-29	30-39	40-44	45-49	50-59	60+	TOTAL	20-29	30-39	40-44	45-49	50-59	60+
SINGLE														
Employed Fulltime in Nrsg.	246	140	39	15	14	19	19	140	101	20	8	2	2	7
Employed Parttime in Nrsg.	16	8	2	1		2	3	9	5				1	3
Employed Outside Nrsg.	18	1	3	3		6	5	5	4	1				
Not Employed	41	14	8		1	7	11	8	5	1				2
Total Single	321	163	52	19	15	34	38	162	115	22	8	2	3	12
MARRIED														
Employed Fulltime in Nrsg.	1,147	199	214	154	198	282	100	937	114	161	119	134	302	107
Employed Parttime in Nrsg.	780	129	246	118	127	112	48	412	62	95	51	49	89	66
Employed Outside Nrsg.	55	3	11	11	8	16	6	64	2	18	7	9	18	10
Not Employed	775	94	230	77	101	143	130	373	76	96	30	23	66	82
Total Married	2,757	425	701	360	434	553	284	1,786	254	370	207	215	475	265
WIDOWED														
Employed Fulltime in Nrsg.	97		4	7	5	37	44	132	2	3	1	11	55	60
Employed Parttime in Nrsg.	30	1	3	1	1	7	17	46		2	1		5	38
Employed Outside Nrsg.	7				1	4	2	4			1		2	1
Not Employed	39	1	1	2		5	30	45	1	3		4	6	31
Total Widowed	173	2	8	10	7	53	93	227	3	8	3	15	68	130
DIVORCED-SEPARATED														
Employed Fulltime in Nrsg.	119	10	26	12	27	32	12	170	29	36	22	24	40	19
Employed Parttime in Nrsg.	15	1	2	3	2	4	3	18		6	3	2	4	3
Employed Outside Nrsg.	5				1	3	1	7	1	1		1	3	1
Not Employed	22	2	5	1		5	9	19	2	2	3	2	2	8
Total Divorced-Separated	161	13	33	16	30	44	25	214	32	45	28	29	49	31
GRAND TOTAL	3,412	603	794	405	486	684	440	2,389	404	445	246	261	595	438

2652

NURSES REGISTERED AND EMPLOYED OR RESIDENT IN IDAHO
Classified by
FIELD OF EMPLOYMENT AND AGE

FIELD OF EMPLOYMENT	REGISTERED NURSES							PRACTICAL NURSES						
		AGE IN YEARS							AGE IN YEARS					
	TOTAL	20-29	30-39	40-44	45-49	50-59	60+	TOTAL	20-29	30-39	40-44	45-49	50-59	60+
EMPLOYED IN NURSING														
Hospital	1,636	414	382	201	244	270	125	1,350	253	237	159	164	347	190
Nursing Home	210	20	38	20	28	56	48	251	26	39	26	24	81	55
Prof. School of Nsg.	49	8	18	7	5	8	3							
Prac. Nurse Program	26	1	4	7	6	8								
Private Duty	24			3	3	6	12	48	5	2	1	4	14	22
Public Health	103	12	16	14	17	31	13	32	1	3	6	4	11	7
School Nurse	63	2	5	11	14	23	8	2		1				1
Industrial Nurse	35	2	3	2	5	15	8	9	1	1		3	1	3
Office Nurse	248	25	53	40	42	69	19	132	23	31	11	19	33	15
Other	56	4	17	6	10	9	10	40	4	9	2	4	11	10
EMPLOYED OUTSIDE NSG.	85	4	14	14	10	29	14	80	7	20	8	10	23	12
NOT EMPLOYED	877	111	244	80	102	160	180	445	84	102	33	29	74	123
TOTAL	3,412	603	794	405	486	684	440	2,389	404	445	246	261	595	438

AGE STATUS OF PROFESSIONAL NURSES IN RELATION TO EMPLOYMENT

RENEWAL PERIOD	1 TOTAL CURR-ENTLY LICEN-SED	2 TOTAL RESIDING IN STATE		3 RESIDING AND EMPLOYED IN IDAHO													
				TOTAL		20-29		30-39		40-44		45-49		50-59		60+	
		NUM.	%	NUM.	%	NUM.	%	NUM.	%	NUM.	%	NUM.	%	NUM.	%	NUM.	%
1959-60	3,724	2595	70%	1602	62%	447	27%	434	27%	207	13%	220	14%	233	15%	61	4%
60-61	3,776	2581	68%	1566	61%	391	25%	441	28%	181	12%	223	14%	260	17%	70	4%
61-62	3,897	2663	68%	1615	61%	381	23%	464	29%	194	12%	220	14%	279	17%	77	5%
62-63	3,966	2708	68%	1835	68%	427	23%	505	28%	246	13%	220	12%	358	20%	79	4%
63-64	4,069	2722	67%	1913	70%	387	20%	481	25%	287	15%	218	12%	426	22%	114	6%
64-65	4,175	2865	69%	1948	68%	369	19%	466	24%	295	15%	240	12%	450	23%	128	7%
65-66	4,096	2891	71%	1960	68%	350	18%	469	24%	292	15%	257	13%	451	23%	141	7%
66-67	4,168	2942	71%	1917	65%	317	17%	453	24%	293	15%	268	14%	430	22%	156	3%
67-68	4,103	2923	71%	2084	71%	368	17%	519	25%	331	16%	275	13%	443	22%	148	7%
68-69	4,318	3050	71%	2202	72%	402	18%	521	24%	342	16%	315	14%	443	20%	179	8%
69-70	4,486	3153	70%	2270	72%	374	16%	537	24%	316	14%	353	16%	461	20%	229	10%
70-71	4,589	3289	72%	2405	73%	426	18%	527	22%	333	14%	378	16%	491	20%	250	10%
71-72	4,548	3412	75%	2450	72%	488	20%	536	22%	311	13%	374	15%	495	20%	246	10%

1. Shows the total number of R.N.'s licensed for the year, residing in and out of Idaho.
2. Shows the total number of R.N.'s, licensed for the year, residing in Idaho, employed and not employed in nursing.
3. Shows the number of R.N.'s in each age category, residing and employed in Idaho.

It is interesting to note that in the past three years there has been a 5% increase in the total residing in the state, and a 4% increase in the number of those employed in the 20-29 year bracket.

COMPARISON OF NUMBER OF HOSPITAL AND NURSING HOME BEDS WITH EMPLOYED NURSES

	HOSPITALS			NURSING HOMES		
COUNTY	BEDS	RN'S	LPN'S	BEDS	RN'S	LPN'S
Ada	476	400	193	607	44	27
Adams	20	7				
Bannock	286	169	157	251	16	18
Bear Lake	35	11	14			
Benewah	37	4	5	60	3	5
Bingham	288	44	62	52	1	2
Blaine	43	26	7			1
Boise						
Bonner	40	20	12	89	8	5
Bonneville	249	166	124	207	7	19
Boundary	32	10	10	20		2
Butte	14	7	4	10		
Camas						
Canyon	335	144	202	457	26	27
Caribou	33	11	17	37	1	2
Cassia	39	24	36	18	2	3
Clark		1				
Clearwater	86	19	22	60	1	6
Custer		2				
Elmore	19	24	4	39	4	4
Franklin	51	11	3	35	1	
Fremont	45	23	14			
Gem	49	19	25	81	4	9
Gooding	25	14	9	152	8	9
Idaho	59	18	11	99	5	8
Jefferson		14	6	21	1	6
Jerome	40	19	19	40	2	6
Kootenai	127	78	56	178	15	7
Latah	60	48	17	138	11	6
Lemhi	39	8	16	39	1	8
Lewis		5				
Lincoln		4	1	34	3	3
Madison	30	27	14			2
Minidoka	25	23	20	36		2
Nez Perce	103	72	89	216	14	18
Oneida	11	6	8	14		1
Owyhee		3	2	42	2	4
Payette		3	2	83	7	10
Power	25	8	21	20		
Shoshone	102	37	28	156	5	11
Teton	13	6	1			
Twin Falls	161	76	105	287	16	14
Valley	34	14	5	54	1	1
Washington	30	11	9	89	1	5
TOTALS	3061	1636	1350	3721	210	251

It should be noted that some nursing homes are operated in conjunction with hospitals. In completing the census questionnaires it is possible nurses considered themselves employed by hospitals rather than be nursing homes, which may distort the figures of those working in nursing homes.

PROFESSIONAL NURSES EMPLOYED IN IDAHO
Classified by
FIELD OF EMPLOYMENT, AND TYPE OF POSITION
July 1, 1971 - June 30, 1972

FIELD OF EMPLOYMENT	TYPE OF POSITION							
	TOTAL	ADMIN. OR ASS'T	CONSUL-TANT	SUPERV. OR ASS'T	INSTR-UCTOR	HEAD NURSE OR ASS'T	STAFF	OTHER
Hospital	1,636	35		176	18	278	1,034	95
Nursing Home	210	15		62	1	51	68	13
Prof. School of Nursing	49	5			44			
Prac. Nurse Program	26				26			
Private Duty	24							24
Public Health	103	3	3	14		1	77	5
School Nurse	63			15			48	
Industrial Nurse	35			10			25	
Office Nurse	248							248
Other	56	5	2	6	2	2	6	33
TOTAL	2,450	63	5	283	91	332	1,258	418

9992

PROFESSIONAL NURSES REGISTERED AND EMPLOYED OR RESIDENT IN IDAHO
Classified by
TYPE OF POSITION, SEX, AND MARITAL STATUS
July 1, 1971 - June 30, 1972

TYPE OF POSITION	SEX			MARITAL STATUS				
	TOTAL	MALE	FEMALE	TOTAL	SINGLE	MAR'D	WIDOWED	DIV-SEP
EMPLOYED IN NURSING								
Administrator or Assistant	63	3	60	63	5	48	4	6
Consultant	5	1	4	5		4		1
Supervisor or Assistant	283	1	282	283	19	225	21	18
Instructor	90	2	88	90	14	66	3	7
Head Nurse or Assistant	332	3	329	332	20	273	22	17
General Duty or Staff	1,257	19	1,238	1,257	171	974	53	59
Other	420	18	402	420	33	337	24	26
EMPLOYED OUTSIDE NURSING	85	9	76	85	18	55	7	5
NOT EMPLOYED	877	4	873	877	41	775	39	22
TOTAL	3,412	60	3,352	3,412	321	2,757	173	161

PRACTICAL NURSES EMPLOYED IN IDAHO
Classified by
TYPE OF EDUCATION AND AGE
July 1, 1971 -- June 30, 1972

TYPE OF EDUCATION	AGE									
	TOTAL	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+
Examination and one year Practical Nurse Course	1,738	144	169	162	157	193	207	253	211	242
Examination and Short Course*	55				3	5	5	5	11	26
Examination and Waiver of Practical Nurse Education*	24				1	1	3	3	4	12
No Examination and Waiver of Practical Nurse Education*	47					6	7	5	6	23
TOTAL	1,864	144	169	162	161	205	222	266	232	303

*It should be noted that these licenses were issued prior to 1951. Since that time all licenses have been issued on the basis of graduation from an accredited one year practical nurse education program and the State Board Test Pool Examination.

PRACTICAL NURSES EMPLOYED IN IDAHO
Classified by
TYPE OF EDUCATION, AND FIELD OF EMPLOYMENT
July 1, 1971 - June 30, 1972

TYPE OF EDUCATION	TOTAL	FIELD OF EMPLOYMENT						
		HOSPITAL	NURSING HOME	PRIVATE DUTY	PUBLIC HEALTH	INDUS-TRY	OFFICE NURSE	OTHER
Examination and One year Practical Nurse Course	1,738	1,284	226	37	29	7	117	38
Examination and Short Course*	55	26	11	4	2	1	9	2
Examination and Waiver of Practical Nurse Education*	24	16	1	3			4	
No Examination and Waiver of Practical Nurse Education*	47	24	13	4	1	1	4	
TOTAL	1,864	1,350	251	48	32	9	134	40

*It should be noted that these licenses were issued prior to 1951. Since that time all licenses have been issued on the basis of graduation from an accredited one year practical nurse education program and the State Board Test Pool Examination.

PROFESSIONAL NURSES REGISTERED IN IDAHO
Classified by
LOCATION, BASIC EDUCATION, HIGHEST DEGREE HELD, EMPLOYMENT STATUS, AND AGE
July 1, 1971 - June 30, 1972

LOCATION and EDUCATION	GRAND TOTAL	EMPLOYED IN NURSING						EMPLOYED OUTSIDE NURSING						NOT EMPLOYED					
		TOTAL	20-29	30-39	40-49	50-59	60+	TOTAL	20-29	30-39	40-49	50-59	60+	TOTAL	20-29	30-39	40-49	50-59	60+
LOCATED IN STATE																			
Basic Education																			
Diploma	2,572	1,808	172	365	588	452	231	64		7	20	26	11	700	43	176	162	146	173
Associate Degree	448	363	218	83	42	16	4	8	3	4	1			77	42	29	4	1	1
Baccalaureate	392	279	97	88	55	27	12	13	1	3	3	3	3	100	25	39	16	13	7
Highest Degree Held																			
No Degree	2,825	2,025	378	407	594	429	217	60	3	7	19	23	8	740	81	191	158	143	167
Bacc. in Nursing	463	340	103	103	71	45	18	13	1	4	2	2	4	110	24	44	18	11	13
Bacc. in Other	62	40	3	9	8	13	7	6		1	1	3	1	16	4	3	5	4	
Masters in Nrsg.	48	37	3	16	8	7	3	4		2	1	1		7	1	4		2	
Masters in Other	14	8		1	4	1	2	2			1		1	4		2	1		1
TOTAL	3,412	2,450	487	536	685	495	247	85	4	14	24	29	14	877	110	244	182	160	181
LOCATED OUT OF STATE																			
Basic Education																			
Diploma	848	527	67	105	164	133	58	26	1	1	11	9	4	295	19	77	75	67	57
Associate Degree	143	114	67	30	12	4	1							29	10	16		2	1
Baccalaureate	145	99	36	28	16	16	3	5			1	4		41	6	20	10	3	2
Highest Degree Held																			
No Degree	896	572	127	117	155	124	49	22	1	1	11	6	3	302	28	87	71	64	52
Bacc. in Nursing	175	122	39	34	19	22	8	4			1	2	1	49	7	22	10	6	4
Bacc. in Other	29	20	1	4	6	5	4	1				1		8		1	3	2	2
Masters in Nrsg.	28	22	3	7	10	1	1	2				2		4		2	1		1
Masters in Other	8	4		1	2	1		2				2		2		1			1
TOTAL	1,136	740	170	163	192	153	62	31	1	1	12	13	4	365	35	113	85	72	60
GRAND TOTAL	4,548	3,190	657	699	877	648	309	116	5	15	36	42	18	1,242	145	357	267	232	241

0432

PROFESSIONAL NURSES REGISTERED IN IDAHO
Classified by
LOCATION, FIELD OF EMPLOYMENT, BASIC EDUCATION, AND HIGHEST DEGREE HELD
July 1, 1971 - June 30, 1972

FIELD OF EMPLOYMENT	TOTAL	BASIC EDUCATION			HIGHEST DEGREE HELD					
		DIPLOMA	ASSOC DEGREE	BACC OR HIGHER DEGREE	NO DEGREE	BACC. IN NRSG	BACC. IN OTHER	MASTERS IN NRSG	MASTERS IN OTHER	DOCTOR-ATE
LOCATED IN STATE										
Hospital	1,636	1,160	306	170	1,390	213	23	8	2	
Nursing Home	210	168	20	22	182	21	5	2		
Prof. School of Nursing	49	16	3	30	2	21		22	4	
Practical Nurse Program	26	21	1	4	11	14	1			
Private Duty	24	22	1	1	23		1			
Public Health	103	72	8	23	68	30	3	2		
School Nurse	63	52	1	10	49	11	3			
Industrial Nurse	35	31	2	2	32	2	1			
Office Nurse	248	220	17	11	223	22	2	1		
Other	56	46	4	6	45	6	1	2	2	
Employed Outside Nursing	85	64	8	13	60	13	6	4	2	
Not Employed	877	700	77	100	740	110	16	7	4	
TOTAL	3,412	2,572	448	392	2,825	463	62	48	14	
LOCATED OUT OF STATE										
Hospital	507	357	93	57	410	77	11	7	2	
Nursing Home	44	31	6	7	34	9	1			
Prof. School of Nursing	25	6	3	16	1	8	3	11	2	
Practical Nurse Program	3	3			2		1			
Private Duty	12	12			11		1			
Public Health	22	18	1	3	12	6	1	3		
School Nurse	15	9	1	5	9	5	1			
Industrial Nurse	15	12	3		13	2				
Office Nurse	57	50	4	3	51	6				
Other	40	29	3	8	29	9	1	1		
Employed Outside Nursing	31	26		5	22	4	1	2	2	
Not Employed	365	295	29	41	302	49	8	4	2	
TOTAL	1,136	848	143	145	896	175	29	28	8	
GRAND TOTAL	4,548	3,420	591	537	3,720	638	91	76	22	

Of the professional nurses licensed in Idaho, the number of graduates of diploma schools has decreased by 160; associate degree graduates have increased by 80, and baccalaureate degree graduated have increased by 41.

2071

PROFESSIONAL NURSES REGISTERED IN IDAHO
Classified by
LOCATION, TYPE OF POSITION, BASIC EDUCATION, AND HIGHEST DEGREE HELD
July 1, 1971 - June 30, 1972

TYPE OF POSITION	TOTAL	BASIC EDUCATION			HIGHEST DEGREE HELD					
		DIPLOMA	ASSOC. DEGREE	BACC. OR HIGHER DEGREE	NO DEGREE	BACC. IN NRSG.	BACC. IN OTHER	MASTERS IN NRSG.	MASTERS IN OTHER	DOCTOR-ATE
LOCATED IN STATE										
Administrator or Ass't	63	47	5	11	43	9	1	9	1	
Consultant	5	2		3	2	1		2		
Supervisor or Assistant	283	241	19	23	242	33	8			
Instructor	90	50	3	37	25	43	1	17	4	
Head Nurse or Assistant	332	254	50	28	293	31	7	1		
General Duty or Staff	1,257	856	254	147	1,060	176	18	2	1	
Other	420	358	32	30	360	47	5	6	2	
Employed Outside Nursing	85	64	8	13	60	13	6	4	2	
Not Employed	877	700	77	100	740	110	16	7	4	
TOTAL	3,412	2,572	448	392	2,825	463	62	48	14	
LOCATED OUT OF STATE										
Administrator or Ass't	23	16	2	5	13	6	1	2	1	
Consultant	3	2		1				2	1	
Supervisor or Assistant	76	58	8	10	55	16	2	3		
Instructor	33	12	3	18	5	11	4	11	2	
Head Nurse or Assistant	106	81	13	12	88	17		1		
General Duty or Staff	360	244	79	37	300	51	7	2		
Other	139	114	9	16	111	21	6	1		
Employed Outside Nursing	31	26		5	22	4	1	2	2	
Not Employed	365	295	29	41	302	49	8	4	2	
TOTAL	1,136	848	143	145	896	175	29	28	8	
GRAND TOTAL	4,548	3,420	591	537	3,721	638	91	76	22	

PROFESSIONAL NURSES REGISTERED AND EMPLOYED IN IDAHO
Classified by
FIELD OF EMPLOYMENT, TYPE OF POSITION, BASIC EDUCATION, AND HIGHEST DEGREE HELD
July 1, 1971 - June 30, 1972

FIELD OF EMPLOYMENT AND TYPE OF POSITION	TOTAL	BASIC EDUCATION			HIGHEST DEGREE HELD					
		DIPLOMA	ASSOC. DEGREE	BACC. OR HIGHER DEGREE	NO DEGREE	BACC. IN NRSG.	BACC. IN OTHER	MASTERS IN NRSG.	MASTERS IN OTHER	DOCTOR-ATE
HOSPITAL										
Administrator or Assistant	35	29	3	3	29	4		2		
Supervisor or Assistant	176	153	12	11	153	19	4			
Instructor	18	12		6	9	8	1			
Head Nurse or Assistant	278	208	45	25	244	29	4	1		
General Duty or Staff	1,034	684	236	114	882	137	13	1	1	
Other	95	74	10	11	73	16	1	4	1	
TOTAL	1,636	1,160	306	170	1,390	213	23	8	2	
NURSING HOME										
Administrator or Assistant	15	10	1	4	10	3	1	1		
Supervisor or Assistant	63	51	7	5	57	5	1			
Head Nurse or Assistant	51	43	5	3	46	2	3			
General Duty or Staff	68	54	7	7	59	8		1		
Other	13	10		3	10	3				
TOTAL	210	168	20	22	182	21	5	2		
PROF. SCHOOL OF NURSING										
Administrator or Assistant	5	1	1	3				5		
Instructor	44	15	2	27	2	21		17	4	
TOTAL	49	16	3	30	2	21		22	4	
PRACTICAL NURSE PROGRAM										
Instructor	26	21	1	4	11	14	1			
TOTAL	26	21	1	4	11	14	1			
PRIVATE DUTY - TOTAL	24	22	1	1	23		1			

2073

	TOTAL	BASIC EDUCATION			HIGHEST DEGREE HELD					
		DIPLOMA	ASSOC. DEGREE	BACC. OR HIGHER DEGREE	NO DEGREE	BACC. IN NRSG.	BACC. IN OTHER	MASTERS IN NRSG.	MASTERS IN OTHER	DOCTOR-ATE
PUBLIC HEALTH										
Administrator or Assistant	3	3			1	2				
Consultant	3	1		2	1			2		
Supervisor or Assistant	15	9		6	6	8	1			
General Duty or Staff	77	56	8	13	58	18	1			
Other	5	3		2	2	2	1			
TOTAL	103	72	8	23	68	30	3	2		
SCHOOL NURSE										
Supervisor or Assistant	15	15			14	1				
General Duty or Staff	48	37	1	10	35	10	3			
TOTAL	63	52	1	10	49	11	3			
INDUSTRIAL NURSE										
Supervisor or Assistant	10	10			9		1			
General Duty or Staff	25	21	2	2	23	2				
TOTAL	35	31	2	2	32	2	1			
OFFICE NURSE - TOTAL	248	220	17	11	223	22	2	1		
OTHER										
Administrator or Assistant	5	4		1	3			1	1	
Consultant	2	1		1	1	1				
Supervisor or Assistant	6	5		1	5		1			
Instructor	2	2			2					
Head Nurse or Assistant	2	2			2					
General Duty or Staff	6	4		2	4	2				
Other	33	28	4	1	28	3		1	1	
TOTAL	56	46	4	6	45	6	1	2	2	
GRAND TOTAL	2,450	1,808	363	279	2,025	340	40	37	8	

2074

PROFESSIONAL NURSES REGISTERED AND RESIDING WITHIN IDAHO
Classified by
COUNTY, BASIC EDUCATION, AND HIGHEST DEGREE HELD
July 1, 1971 - June 30, 1972

COUNTY	TOTAL	BASIC EDUCATION			HIGHEST DEGREE HELD					
		DIPLOMA	ASSOC. DEGREE	BACC. OR HIGHER DEGREE	NO DEGREE	BACC. IN NRSG.	BACC. IN OTHER	MASTERS IN NRSG.	MASTERS IN OTHER	DOCTOR-ATE
Ada	610	416	141	54	521	65	10	9	4	
Adams	8	8			8					
Bannock	240	166	19	55	172	54	3	9	2	
Bear Lake	12	11		1	11	1				
Benewah	9	8	1		9					
Bingham	58	45	8	5	48	10				
Blaine	37	28	2	7	26	9	1	1		
Boise										
Bonner	36	29	3	4	30	6				
Bonneville	217	175	21	21	179	31	7			
Boundary	12	10		2	10	1		1		
Butte	9	8		1	8	1				
Camas										
Canyon	227	169	37	21	187	33	6	1		
Caribou	16	15	1		16					
Cassia	31	23	5	3	27	2		2		
Clark	1	1			1					
Clearwater	25	17	6	2	22	3				
Custer	2	2			1	1				
Elmore	36	29	5	2	34	2				
Franklin	16	12	1	3	13	3				
Fremont	27	16	7	4	21	6				
Gem	29	25	3	1	25	2	2			

2645

	TOTAL	BASIC EDUCATION			HIGHEST DEGREE HELD					
		DIPLOMA	ASSOC. DEGREE	BACC. OR HIGHER DEGREE	NO DEGREE	BACC. IN NRSG.	BACC. IN OTHER	MASTERS IN NRSG.	MASTERS IN OTHER	DOCTOR-ATE
Gooding	34	29	1	4	29	4	1			
Idaho	30	20	6	4	24	6				
Jefferson	23	14	8	1	20	3				
Jerome	26	21	2	3	21	4		1		
Kootenai	123	100	10	13	105	15	1	2		
Latah	88	64	6	18	64	19	2	2	1	
Lemhi	11	9	1	1	10	1				
Lewis	8	6	1	1	7	1				
Lincoln	8	6		2	6	2				
Madison	33	11	19	3	25	5	1	2		
Minidoka	25	23	1	1	22	3				
Nez Perce	126	93	26	7	112	10		3	1	
Oneida	6	5	1		6					
Owyhee	7	5	2		7					
Payette	17	15	2		17					
Power	11	8	2	1	11					
Shoshone	52	43		9	42	9		1		
Teton	8	3	4	1	6		2			
Twin Falls	126	99	8	19	97	22	4	3		
Valley	16	10	2	4	12	4				
Washington	14	11	1	2	12	2				
TOTALS	2,450	1,808	363	280	2,024	340	40	37	8	

2676

PROFESSIONAL NURSES EMPLOYED IN IDAHO
Classified by
COUNTY AND FIELD OF EMPLOYMENT
July 1, 1971 - June 30, 1972

COUNTY	TOTAL	FIELD OF EMPLOYMENT									
		HOSPIT OR INSTIT.	NURSING HOME	PROF SCHOOL NURSING	PRACT NURSE PROGRAM	PRIVATE DUTY	PUBLIC HEALTH	SCHOOL NURSE	INDUS-TRIAL NURSE	OFFICE NURSE	OTHER
Ada	610	400	44	13	7	13	26	16	3	61	27
Adams	8	7							1		
Bannock	240	169	16	11	2		13	4	5	16	4
Bear Lake	12	11								1	
Benewah	9	4	3			1				1	
Bingham	58	44	1	1	2		3	3	2	1	1
Blaine	37	26					2		1	8	
Boise											
Bonner	36	20	8				1			7	
Bonneville	217	166	7	2	3	4	7	7	10	7	4
Boundary	12	10					1			1	
Butte	9	7					1			1	
Camas											
Canyon	227	144	26	2	3		7	10	2	26	7
Caribou	16	11	1				1			3	
Cassia	31	24	2	1	1		2				1
Clark	1	1									
Clearwater	25	19	1				2		2		1
Custer	2	2									
Elmore	36	24	4					1		7	
Franklin	16	11	1					1		3	
Fremont	27	23		2			1				1
Gem	29	19	4		1	1	1	1		2	

2672

	TOTAL	FIELD OF EMPLOYMENT									
		HOSPIT. OR INSTIT.	NURSING HOME	PROF. SCHOOL NURSING	PRACT. NURSE PROGRAM	PRIVATE DUTY	PUBLIC HEALTH	SCHOOL NURSE	INDUS-TRIAL NURSE	OFFICE NURSE	OTHER
Gooding	34	14	8				3	1		7	1
Idaho	30	18	5			1	2	1		2	1
Jefferson	23	14	1	1			3		1	2	1
Jerome	26	19	2							4	1
Kootenai	123	78	15	3	2		7			16	2
Latah	88	48	11	3	1	1	4	3		16	1
Lemhi	11	8	1					1		1	
Lewis	8	5					1			2	
Lincoln	8	4	3				1				
Madison	33	27		3			1	1		1	
Minidoka	25	23					1				1
Nez Perce	126	72	14	4	2		6	3	6	18	1
Oneida	6	6									
Owyhee	7	3	2					1		1	
Payette	17	3	7					3	1	3	
Power	11	8								3	
Shoshone	52	37	5				1	4		5	
Teton	8	6						1		1	
Twin Falls	126	76	16	3	2	3	4		1	21	
Valley	16	14	1					1			
Washington	14	11	1				1				1
TOTALS	2,450	1,636	210	49	26	24	103	63	35	248	56

8/82

PRACTICAL NURSES EMPLOYED IN IDAHO
Classified by
COUNTY AND FIELD OF EMPLOYMENT
July 1, 1971 - June 30, 1972

COUNTY	TOTAL	FIELD OF EMPLOYMENT									
		HOSPIT OR INSTIT.	NURSING HOME	PROF. SCHOOL NURSING	PRACT NURSE PROGRAM	PRIVATE DUTY	PUBLIC HEALTH	SCHOOL NURSE	INDUS-TRIAL NURSE	OFFICE NURSE	OTHER
Ada	255	193	27			19	3			10	3
Adams											
Bannock	193	157	18			1	5			10	2
Bear Lake	14	14									
Benewah	11	5	5								1
Bingham	84	62	2			1	7			9	3
Blaine	9	7	1								1
Boise											
Bonner	22	12	5			2				3	
Bonneville	165	124	19			2	2			18	
Boundary	17	10	2				1			3	1
Butte	4	4									
Camas											
Canyon	267	202	27			3	6		2	13	14
Caribou	19	17	2								
Cassia	48	36	3			2		1		5	1
Clark											
Clearwater	37	22	6				3		2	2	2
Custer										1	
Elmore	9	4	4							1	
Franklin	4	3								3	1
Fremont	18	14							1	2	
Gem	37	25	9								

6/02

	TOTAL	FIELD OF EMPLOYMENT									
		HOSPIT. OR INSTIT.	NURSING HOME	PROF. SCHOOL NURSING	PRACT. NURSE PROGRAM	PRIVATE DUTY	PUBLIC HEALTH	SCHOOL NURSE	INDUS-TRIAL NURSE	OFFICE NURSE	OTHER
Gooding	23	9	9							2	3
Idaho	27	11	8			1	1			6	
Jefferson	13	6	6			1					
Jerome	25	19	6								
Kootenai	75	56	7			4	1			6	1
Latah	27	17	6							3	1
Lemhi	26	16	8							2	
Lewis	1					1					
Lincoln	4	1	3								
Madison	20	14	2			1				3	
Minidoka	25	20	2							3	
Nez Perce	123	89	18			7	1	1	2	3	2
Oneida	10	8	1							1	
Owyhee	8	2	4				2				
Payette	15	2	10							2	1
Power	24	21							1	2	
Shoshone	43	28	11							4	
Teton	1	1									
Twin Falls	137	105	14			2			1	13	2
Valley	7	5	1							1	
Washington	17	9	5			1				1	1
TOTALS	1,864	1,350	251			48	32	2	9	132	40

PROFESSIONAL NURSES REGISTERED AND EMPLOYED OR RESIDENT IN IDAHO
Classified by
COUNTY, AGE, AND EMPLOYMENT STATUS
July 1, 1971 - June 30, 1972

COUNTY	GRAND TOTAL	EMPLOYED IN NURSING							EMPLOYED OUTSIDE NURSING							NOT EMPLOYED						
		TOTAL	20-29	30-39	40-44	45-49	50-59	60+	TOTAL	20-29	30-39	40-44	45-49	50-59	60+	TOTAL	20-29	30-39	40-44	45-49	50-59	60+
Ada	826	610	145	147	83	79	113	43	18	1	4	3	1	8	1	198	19	60	15	20	39	45
Adams	13	8	1	1	2	1	2	1								5		3				2
Bannock	305	240	57	50	29	26	49	29	1				1			64	11	17	8	4	12	12
Bear Lake	16	12		2		2	5	3								4		2		1	1	
Benewah	13	9	1	1		3	2	2								4			1			3
Bingham	89	58	9	12	6	14	14	3	3	1			1	1		28	5	13	3		1	6
Blaine	52	37	9	13	3	4	4	4	4		2	1		1		11	1	3		1	2	4
Boise																						
Bonner	52	36	7	8	2	7	7	5	2		1	1				14	2	5	1	3	2	1
Bonneville	304	217	36	43	40	31	47	20	5					3	2	82	12	25	8	13	12	12
Boundary	23	12		2	5	1	1	3	2			2				9		6	2	1		
Butte	12	9		3	1	5			1					1		2				1	1	
Camas	3															3		1		1	1	
Canyon	314	227	45	54	28	32	43	25	8			1	1	3	3	79	10	14	7	8	20	20
Caribou	22	16	3	5	1	1	4	2								6		1	1	1	1	2
Cassia	43	31	8	8	4	2	7	2	1		1					11	2	4		3	1	1
Clark	2	1	1													1						1
Clearwater	42	25	4	5	3	4	8	1	1		1					16	1	5		3	5	2
Custer	6	2		1			1									4		1	2	1		
Elmore	54	36	10	10	5	6	2	3	3				1	2		15	3	8		1		3
Franklin	21	16	2	2	1	4	2	5	1					1		4	1	3				
Fremont	38	27	2	11	4	4	3	3	1						1	10	1	3			4	2
Gem	41	29	1	7	4	7	6	4	2			1	1			10	1	2	4	1	2	
Gooding	46	34	4	5	5	5	15		1			1				11		3	1	1		6
Idaho	53	30	5	4	3	3	8	7	5	1		1		2	1	18	3	3	4	2	2	4

1962

COUNTY	GRAND TOTAL	EMPLOYED IN NURSING							EMPLOYED OUTSIDE NURSING							NOT EMPLOYED						
		TOTAL	20-29	30-39	40-44	45-49	50-59	60+	TOTAL	20-29	30-39	40-44	45-49	50-59	60+	TOTAL	20-29	30-39	40-44	45-49	50-59	60+
Jefferson	40	23	6	7	2	5	1	2	1			1				16	3	5	1	2	2	3
Jerome	32	26	5	4	5	6	5	1								6	2	3			1	
Kootenai	165	123	24	24	14	23	30	8	4		1		1	1	1	38	3	6	6	4	8	11
Latah	129	88	30	19	8	7	14	10	3		1	1			1	38	5	14	2	5	7	5
Lemhi	26	11	1	3	1	4	1	1	4		1	1		1	1	11	1	2	3	3	2	
Lewis	12	8	1		3	2	1	1								4	1		1	1	1	
Lincoln	10	8		3		3	2									2	1					1
Madison	48	33	14	6	4	6	2	1	1	1						14	6				4	4
Minidoka	44	25	3	5	4	9	2	2	3		1		1	1		16	1	7		2	4	2
Nez Perce	166	126	22	28	16	20	29	11	4					2	2	36	5	4	4	7	10	6
Oneida	8	6	1	1	1		1	2								2	1			1		
Owyhee	13	7	2			2	2	1	1		1					5		1	2	1	1	
Payette	22	17	1		1	3	10	2								5	1	2	1		1	
Power	22	11	2	1	3	1	3	1								11	2	3	1	3		2
Shoshone	66	52	7	10	4	13	9	9	1					1		13		2		2	4	5
Teton	9	8	1	1	1	3	1	1								1	1					
Twin Falls	160	126	11	23	12	23	34	23	2					1	1	32	3	8	2	2	4	13
Valley	24	16	4	6	1		3	2	2				2			6	1	1		3	1	
Washington	26	14	3	1	2	3	2	3								12	2	4			4	2
TOTAL	3,412	2,450	488	536	311	374	495	246	85	4	14	14	10	29	14	877	111	244	80	102	160	180
PERCENTAGES	100%	72%							2%							26%						
PERCENTAGES		100%	20%	22%	13%	15%	20%	10%	100%	5%	16%	16%	12%	35%	16%	100%	13%	28%	9%	12%	18%	20%

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PERCENTAGE BREAKDOWN BY AGE OF ALL REGISTERED PROFESSIONAL NURSES RESIDING IN IDAHO

AGE	NUMBER	%	
20-29	603	18%	
30-39	794	23%	
40-44	405	12%	
45-49	486	14%	1,610
50-59	684	20%	or
60+	440	13%	47%

PRACTICAL NURSES LICENSED AND EMPLOYED OR RESIDENT IN IDAHO

Classified by
COUNTY, AGE, AND EMPLOYMENT STATUS
July 1, 1971 - June 30, 1972

COUNTY	GRAND TOTAL	EMPLOYED IN NURSING							EMPLOYED OUTSIDE NURSING							NOT EMPLOYED						
		TOTAL	20-29	30-39	40-44	45-49	50-59	60+	TOTAL	20-29	30-39	40-44	45-49	50-59	60+	TOTAL	20-29	30-39	40-44	45-49	50-59	60+
Ada	340	255	47	47	21	31	67	42	12	1	3		1	3	4	73	8	16	5	3	14	27
Adams	2															2			1		1	
Bannock	255	193	33	41	23	21	48	27	10	1	2	1	2	2	2	52	10	12	4	6	9	11
Bear Lake	17	14	1			1	5	7								3					1	2
Benewah	14	11	1	2	4	1	1	2	1		1					2						2
Bingham	110	84	17	13	12	7	20	15	7			1	1	4	1	19	4	9	3			3
Blaine	11	9	4	3		2			1		1					1		1				
Boise	4								1					1		3		1			1	1
Bonner	28	22	2	3	1	6	6	4	1						1	5		1		2	1	1
Bonneville	208	165	42	33	14	15	34	27	7	4	1	1		1		36	13	13		3	4	3
Boundary	23	17	3	5	1	3	3	2	1				1			5	2	2			1	
Butte	6	4	1	1	1			1	1				1			1		1				
Camas	1															1						1
Canyon	314	267	46	42	32	34	73	40	5		2	1		1	1	42	8	6		1	9	18
Caribou	25	19		3	3	4	9									6	1		1	1	1	2
Cassia	51	48	6	9	10	10	8	5								3	1				1	1
Clark																						
Clearwater	49	37	2	4	8	6	12	5	4		3		1			8	1	2			3	2
Custer	2								1		1					1	1					
Elmore	13	9	4	1		1	1	2								4	1	2			1	
Franklin	7	4					3	1	1				1			2	1				1	
Fremont	27	18	1	4	4	2	2	5	1					1		8	1	2	1		1	3
Gem	41	37	2	3	6	1	17	8	2					1	1	2					1	1
Gooding	36	23	1	3	2	1	14	2	3			2		1		10	3				2	5
Idaho	35	27	5	4	3	4	5	6	1		1					7		4	1			2

COUNTY	GRAND TOTAL	EMPLOYED IN NURSING							EMPLOYED OUTSIDE NURSING							NOT EMPLOYED						
		TOTAL	20-29	30-39	40-44	45-49	50-59	60+	TOTAL	20-29	30-39	40-44	45-49	50-59	60+	TOTAL	20-29	30-39	40-44	45-49	50-59	60+
Jefferson	22	13	3	1	2		4	3								9	2	4			1	2
Jerome	30	25	4	2	4	2	10	3	2				1	1		3		1	1		1	
Kootenai	95	75	19	15	6	11	16	8	1						1	19	4	2	1	2	3	7
Latah	32	27	9	5	3	3	5	2								5	2	1	1			1
Lemhi	35	26		7	3	1	8	7								9	1		1	3		4
Lewis	8	1				1										7	2	2		1	2	
Lincoln	5	4		1		2		1								1				1		
Madison	25	20	1	2	1	1	11	4								5	1	1		1	1	1
Minidoka	34	25	3	7	5	2	7	1	3	1	1	1				6	2	1	1	2		
Nez Perce	160	123	22	23	6	17	33	22	8		4			3	1	29	6	5	2	2	4	10
Oneida	14	10				1	6	3	1					1		3	1			1	1	
Owyhee	9	8	1	1	1	1	2	2								1					1	
Payette	16	15	3	5			3	4								1						1
Power	28	24	6	1	4	2	7	4								4		1	1	1	1	
Shoshone	58	43	3	5	4	9	14	8	2			1		1		13	2	3	3	1	1	3
Teton	2	1					1									1		1				
Twin Falls	163	137	19	24	19	16	37	22	3				1	2		23	2	6	3	1	6	5
Valley	12	7		1		1	3	2								5	3	1				1
Washington	22	17	2	2	2	3	2	6								5	1	1				3
TOTAL	2,389	1,864	313	323	205	222	498	303	80	7	20	8	10	23	12	445	84	102	33	29	74	123
PERCENTAGES	78%								3%							19%						
PERCENTAGES		100%	17%	17%	11%	12%	27%	16%	100%	9%	25%	10%	12%	29%	15%	100%	19%	23%	7%	7%	17%	27%

PERCENTAGE BREAKDOWN BY AGE OF ALL LICENSED PRACTICAL NURSES RESIDING IN IDAHO

AGE	NUMBER	%	
20-29	404	17%	
30-39	445	19%	
40-44	246	10%	
45-49	261	11%	1,294
50-59	595	25%	or
60+	438	18%	54%

VT 019 390

VT 019 390
A REPORT ON TRAFFIC SAFETY EDUCATION IN THE PUBLIC, PRIVATE, AND/OR PAROCHIAL SCHOOLS IN THE STATE OF MINNESOTA.

MINNESOTA UNIV., MINNEAPOLIS. GENERAL EXTENSION DIV.; MINNESOTA STATE DEPT. OF EDUCATION, ST. PAUL. DIV. OF ELEMENTARY AND SECONDARY EDUCATION.
MF AVAILABLE IN VT-ERIC SET.
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DESCRIPTORS - *STATE SURVEYS; AREA STUDIES; STATISTICAL ANALYSIS; *DRIVER EDUCATION; SECONDARY GRADES; ACCIDENT PREVENTION; TRAFFIC SAFETY; *RELEVANCE (EDUCATION); *CURRICULUM RESEARCH; *EDUCATIONAL PROGRAMS
IDENTIFIERS - *MINNESOTA

ABSTRACT - THIS SURVEY IS THE RESULT OF A SHORT TERM RESEARCH EFFORT ENTERED IN TO BY THE STATE DEPARTMENT OF EDUCATION IN CONJUNCTION WITH A LARGER PROJECT BEING PURSUED BY THE MINNESOTA SAFETY EDUCATION FOUNDATION, THAT OF IMPROVING THE TOTAL REALM OF DRIVER EDUCATION IN THE STATE. TO OBTAIN BASE DATA ON DRIVER EDUCATION PROGRAMS, QUESTIONNAIRES WERE DISTRIBUTED TO 540 SECONDARY PUBLIC AND NON-PUBLIC SCHOOL SUPERINTENDENTS AND PRINCIPALS AND THE 1,438 DRIVER EDUCATION INSTRUCTORS EMPLOYED IN THE SCHOOL SYSTEM. A TOTAL OF 370 ADMINISTRATIVE AND 1,200 INSTRUCTOR QUESTIONNAIRES WERE RETURNED. SOME OF THE FINDINGS WERE: (1) THE STUDENT POPULATION ELIGIBLE TO RECEIVE DRIVER EDUCATION IN MOST DISTRICTS IS FAIRLY SMALL, (2) THREE PHASES OF INSTRUCTION, CLASSROOM PHASE, LABORATORY PHASE, AND A COMBINATION OF THE TWO, ARE GIVEN STUDENT ENROLLEES, (3) THE MAJORITY OF SCHOOLS DO NOT MAKE DRIVER EDUCATION AVAILABLE TO SPECIAL EDUCATION STUDENTS, (4) IN MOST DISTRICTS NO FEES ARE CHARGED FOR THE COURSE, WHILE IN OTHERS, THE FEE VARIES, AND (5) OF THE DISTRICTS SURVEYED, 275 PRESENTLY DO NOT HAVE WRITTEN CURRICULUM GUIDES. (SN)

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MAR 16 1972

Statistical Report of the Minnesota Driver Education Program

State of Minnesota
DEPARTMENT OF EDUCATION
St. Paul

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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Code XIV-B-505

Division of Ellementary and Secondary Education
Traffic Safety Education
Minnesota Department of Education
St. Paul, Minnesota 55101

A REPORT ON TRAFFIC SAFETY EDUCATION IN THE PUBLIC, PRIVATE, AND/OR PAROCHIAL SCHOOLS IN THE STATE OF MINNESOTA

1970

ED 014
2087

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Foreword

Nationally, there is a clear need for action to improve the highway traffic situation which results in unnecessary loss of life and property each year.

Cognizant of this need, the State Department of Education entered into an agreement with the Automotive Safety Education Foundation hereinafter called "Highway Users Federation for Mobility and Safety" for the necessary and needed technical assistance and planning. Staff personnel of this organization conducted short term projects, research, demonstrations, and evaluations of such needs and their priorities. One of the results of this study indicated Data Systems for Minnesota Driver Education teachers and program.

This two-part report indicates briefly the need for improved data collection on teachers and school programs and illustrates initial steps taken to build a system that will serve the needs of Minnesota.

Program data information will show you where you have been, what you are doing and what you need to do in secondary driver education. A compiled data report from throughout the state will indicate statewide needs, program changes and where assistance is needed. This will enable the State Department of Education to further improve driver education in the state.

The compiled data and documented material was prepared at the University of Minnesota General Extension Division, under the direction of Dr. Willard Phillipson, and David R. Reinertson, Research Assistant.

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I. Introduction

During the spring of 1970, a survey of the driver education programs around the state of Minnesota was made by the unit of Traffic and Safety Education of State Department of Education with the cooperation of the University of Minnesota. The importance of this survey lies in the fact that for the first time the Unit of Traffic and Safety Education has been able to obtain a general picture of the strengths and weaknesses of the driver education programs throughout the state.

In some respects, however, the information obtained through the survey has been disappointing largely because of a less than 100% response to the questionnaires and also because the data obtained in certain areas is not as specific as would have been desirable

The following report is a detailed compilation of all the data obtained from the survey questionnaires. A summary of certain portions of the information contained herein has already been made available.

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II. Mechanics of Data Collection and Presentation

Formulating the Questionnaires

The basic questions which comprised both the program and the individual instructor questionnaires were derived from two sources:

1. a Driver Education Statistical data form used by the Driver Education Unit at the termination of each school year to compile data information about driver education programs, and
2. teacher information cards of individual driver education instructors.

Further revisions of certain questions and addition of others were made in consultation with Mr. Gene Bealka, Assistant Supervisor of Traffic and Safety Education for the State Department of Education; Dr. Howard Matthias, St. Cloud State College; and Mr. Irvin Vogtsberger, Coordinator of the Driver Education and Safety Program of the Minneapolis Public Schools.

Distribution of Questionnaires

The questionnaires along with a cover letter from Farley Bright, Deputy Commissioner of the Department of Education, explaining the reasons for the survey and the importance of a rapid response (see Appendix) were mailed on January 23, 1970, to all secondary school superintendents in the state. It was the responsibility of the superintendent that the program questionnaire was answered by someone who was knowledgeable about the district's driver education program and also to distribute the individual instructor questionnaires to the driver education instructors in the district.

A deadline of February 10, 1970, was set for the return of such questionnaires. This deadline was subsequently extended to March 1, when it became apparent that many districts had not been sent enough individual instructor questionnaires for all the instructors in their districts. In effect, the deadline for returning questionnaires was extended once again when the response rate was not as high as was desired. In an attempt to remedy the low initial return rate a follow-up letter was mailed on March 12, 1970, to all superintendents requesting them, if they had not already done so, to return the program questionnaires and make sure their staff had also responded to the individual instructor questionnaires.

Finally it was decided that March 20 was to be the final cut-off point and that any more incoming questionnaires would not be included in the computerized processing of the data.

Response to Questionnaires

The response rate to both types of questionnaires was relatively high in comparison to common return rates for mailed-out questionnaires even though it fell short of 100%.

Program questionnaires were mailed to 510 public school district superintendents and to the superintendents (and/or) principals of 30 non-public schools for a total of 540. Of this number 370 questionnaires were returned (362 from public schools and 8 from private, parochial schools) for a return rate of 69%.*

Returns of 1,200 individual instructor questionnaires were received. Since the exact number of driver education instructors in the state is not known, it is impossible to say what percentage of instructors the 1,200 returns represents. An approximation may be made by comparing this figure to the number of driver education instructors listed in the Driver Education Fact Sheet for 1968-69. The Fact Sheet shows 1,438 driver education instructors employed in the schools of Minnesota for that year which would mean that the number of returned questionnaires represents 83% of the total instructors in the state for the 1968-69 school year. If it is assumed that there were more instructors in 1969-70 than 1968-69, then 83% is undoubtedly a somewhat high figure.

Limitations of the Data

There are a number of restrictions on the information contained in this report due to certain inadequacies of the data. Such problems as the less than 100% response to the questionnaires, the confusion of some respondents over just what information was being solicited by particular questions, the unspecific response choices of certain questions, among other factors, are the major causes of these restrictions.

Although it is possible to speak of percentages of the 370 schools or 1,200 individual instructors who responded, computing these percentages does not really add any information. Therefore, all data will be reported in the form of simple frequencies.

*Some of the non-reporting districts (or schools) may not have had any driver education programs. According to the Driver Education Fact Sheet for 1968-69, there were at that time 452 public secondary schools and 42 non-public schools offering the complete program of classroom and behind-the-wheel driver education. This is a total of 494 or 46 less than the number of schools to which program questionnaires were sent.

What the Report Does Show

What this report does contain is a generalized and relatively comprehensive picture of the driver education programs sponsored by the various schools in the State of Minnesota and a good deal of information about the instructors involved in these programs. Much of this information, limited as it may be, is not presently available and has never been available in the past.

In 1965, the state legislature enacted legislation making driver education mandatory *for all persons under 18 years of age* and making the provision of this training the responsibility of the Department of Education. In order to effectively carry out this mandate from the legislature a great deal of previously unavailable information is required. It is to this end that the present report is directed.

In future years, having learned from the shortcomings of this effort, a much more complete and accurate information survey will be possible.

Format of the Report

The body of this report is composed of two major sections (Sections III and IV) containing the information solicited by the two questionnaires. Section III covers the basic driver education program as it is offered by the various schools throughout the state. Section IV concerns itself with information about driver education instructors.

Each section has been divided into various subsections toward the different aspects of the driver education program and each of these subsections is referenced in the table of contents. The original questionnaires have been included in the Appendix and each subsection of the report includes references to the original questions so that the reader may easily turn to the questions which solicited the information presented. Any specific limitations or inconsistencies of the data presented in each subsection will be noted along with that data to eliminate as much as possible, any errors resulting from possible misinterpretation of results.

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III. Program Questionnaire Results

GENERAL INFORMATION

1. Number of Districts Reporting Various Numbers of Public and Private/Parochial School Students Eligible for Their Driver Education Programs in 1968-69 and 1969-70. (Q 1, 5, 7, 8)

Table 1 gives an idea of the potential size of the driver education programs in the 370 reporting districts around the state. It indicates the number of districts reporting particular numbers of public and private/parochial school students who were eligible to participate in the driver education programs both in 1968-69 and in 1969-70.

One piece of information provided by Table 1 is that the student population eligible to receive driver education in most districts is fairly small. In 1968-69, 237 districts reported less than 100 public school students eligible for driver education. By 1969-70 this figure had fallen by 5 to 232.

TABLE 1

Number of Districts Reporting Various Numbers of Public and Private/Parochial School Students Eligible for Their Driver Education Programs in 1968-69 and 1969-70

	Number of Districts			
	Public School Students		Private/Parochial School Students	
Number of Students	1968-69	1969-70	1968-69	1969-70
0	7	11	261	267
1-25	33	32	61	51
26-50	97	90	11	12
51-100	100	99	16	18
101-200	58	69	8	6
201-300	27	19	0	2
301-400	14	17	1	1
401-500	7	7	1	0
501-750	6	7	0	0
751-1,000	10	10	0	1
1,001-1,350	2	2	0	0
1,351-1,500	2	1	0	0
1,501-2,000	0	0	0	0
2,001-2,500	0	1	0	1
2,501-3,000	2	1	2	2
3,001-3,500	0	1	0	0
3,501-4,000	1	1	1	1
4,001-4,500	0	0	0	0
4,501-5,000	0	0	0	0
5,001-5,500	1	0	1	0
5,501 and Above	1	0	0	1
No Response	2	2	7	7
Total	370	370	370	370

TABLE 2

Number of Districts in Which Various Numbers of Public School Students Completed Various Phases of the Driver Education Program in 1968-69.

		Number of Districts	
Number of Public School Students	Both Clsrm. and Lab. Phase	Clsrm. Phase Only	Lab. Phase Only
0	14	65	97
1-25	39	60	57
26-50	103	85	77
51-100	93	76	62
101-200	58	39	36
201-300	22	14	9
301-400	12	5	6
401-500	3	5	4
501-750	7	5	4
751-1,000	12	6	3
1,000-1,350	1	0	1
1,351-1,500	0	0	0
1,501-2,000	0	1	0
2,001-2,500	1	1	0
2,501-3,000	1	0	0
3,001-3,500	0	0	0
3,501-4,000	0	0	0
4,001-4,500	0	0	0
4,501-5,000	0	0	0
5,001-5,500	0	0	0
5,501 and above	0	0	0
No Response	4	8	14
Total	370	370	370

The relatively small number of eligible private/parochial school driver education students in the same years is even more striking. In 1968-69, 349 districts reported less than 100 private/parochial school students eligible for driver education. In 1969-70 the figure was 349 districts. Most of these districts, as may be seen in Table I, reported no private/parochial school students eligible for their driver education program. This is interesting given the fact that the public school system is responsible for providing driver education to all students in each district.

2. Number of Districts in Which Various Numbers of Public School Students Completed Various Phases of the Driver Education Program in 1968-69. (Q 2, 3, 4)

Table 2 indicates the number of districts where various numbers of public school students completed different phases of the driver education program in 1968-69. The "phases" include the classroom phase, the laboratory phase, and both of these together. (See Table 2 on preceding page.)

The meaning of the data presented in this table is very uncertain due mostly to the fact that the questions soliciting this information were confusing to respondents and, as a result, were answered inconsistently.

If we take the data at face value and look only at the number of districts reporting various numbers of students who completed both the classroom and laboratory phases of the driver education program and then compare these figures to the first column in Table 1 which reports the number of districts with various numbers of public school students eligible for the driver education program for the same year (1968-69), it may be seen that (1) for the most part, the figures are not equal, and (2) in Table 2 there are more districts represented lower down on the scale of "Number of Students" than in Table 1. The inference to be made, no great revelation to be sure, is that fewer public school students completed both the classroom and laboratory phases of the driver education program in their district in 1968-69 than were eligible for the program.

TABLE 3
Number of Districts Reporting Various Numbers of Private/Parochial School Students Completing Any Phase of the Driver Education Program in 1968-69.

Number of Private/Parochial School Students	Number of Districts Completed Any Phase of Driver Education Pro.
0	265
1-25	64
26-50	14
51-100	11
101-200	4
201-300	1
301-400	1
401-500	0
501-750	0
751-1,000	0
1,001-1,350	0
1,351-1,500	1
1,501-2,000	0
2,001-2,500	0
2,501-3,000	2
3,001-3,500	0
3,501-4,000	0
4,001-4,500	0
4,501-5,000	0
5,001-5,500	0
5,501 and above	0
No Response	7
Total	370

The rest of Table 2 is essentially meaningless and has been included only for the sake of completions. Even the inference mentioned previously may not be correct.

3. Number of Districts Reporting Various Numbers of Private/Parochial School Students Completing Any Phase of the Driver Education Program in 1968-69. (Q 6)

Table 3 indicates the number of districts in which various numbers of private/parochial school students completed any phase, i.e. classroom, or laboratory phase or both, of the driver education program in 1968-69.

This data is clearer than the information reported in Table 2 and essentially supports a similar inference. When compared to column 3 in Table 1 which shows the number of private/parochial school students eligible for the different districts' driver education programs in 1968-69, it appears from Table 3 that more districts report fewer private/parochial students finishing the driver education program than were eligible to participate in it. The differences are not large and should not have been unexpected.

4. Special Driver Education Programs (Q 9, 10, 11)

The availability of driver education to special subgroups within the student population is indicated by Table 4. As may be seen from the table, driver education is not available to dropouts in 58 of the 370 reporting districts. Separate driver education programs are not available to special education students (Educable Mentally Retarded) in 339 districts and 355 districts do not have separate programs for physically handicapped students.

One possible drawback of the information obtained from the last two questions is that they ask whether or not *separate* programs are available. It is possible that some districts may provide driver education for those students along with the regular students but reported that they did not have separate instructional programs for them.

5. Fees (Q 12, 13, 14)

The fees charged for the driver education program by the 370 reporting districts are indicated by Table 5. It should be noted that the fee structures vary somewhat depending on when instruction is offered, i.e. all instruction during school hours, classroom instruction during school hours and laboratory instruction outside of school hours, and all instruction outside of school hours.

Particularly noteworthy in this table is that (1) about ⅔ of the reporting districts charge no fees at all no matter when their programs are offered and (2) the

fee range varies greatly among those districts which do charge some fees. Although not noted in the table the private/parochial schools tend to charge the highest rates.

Those districts indicating that the questions were not applicable did so, for the most part at least, because they did not offer their programs in the manner indicated by the question.

TABLE 4
Special Driver Education Programs

	Number of Districts			
	Yes	No	No Response	Total
Driver Education available to dropouts?	310	58	2	370
Separate Driver Education program for special education students?	29	339	2	370
Separate Driver Education program for physically handicapped students?	13	355	2	370

TABLE 5
Number of Districts Charging the Following Fees

	No Chg.	5.00 less	5.01 10.00	10.01 15.00	15.01 20.00	20.01 25.00	25.01 30.00	30.01 35.00	35.01 40.00	40.01 45.00	45.01 50.00	50.01 55.00	55.01 and above	Total charging any fees
All instruction during school hours	263	15	9	4	6	4	0	1	1	0	1	0	0	41
Classroom instruction during school hours; lab. instruction outside of school hours	257	26	17	12	6	10	2	5	2	0	1	2	0	83
All instruction outside of school hours	219	12	12	10	6	11	5	2	2	3	3	1	2	69

Question Not Applicable	No Response	Total
63	3	370
25	5	370
75	7	370

6. Written Curriculum Guide (Q 15)

Table 6 indicates the extent of the use of written curriculum guides for driver education in the 370 reporting districts. Of the 370 districts, 275 do not presently have written curriculum guides.

TABLE 6
Availability of Written Curriculum Guides

	No. of Districts
Written Curriculum Guide Available	93
Guide Not Presently Available, however, one is being prepared	30
Not Available	245
No Response	2
TOTAL	370

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7. Availability of Instructional Materials (Q 16)

Table 7 indicates the availability of driver education instructional materials among the reporting districts. Only 4 districts report having no materials available.

TABLE 7
Availability of Textbooks and Instructional Materials

	Number of Districts				
	Yes	Materials Available But Not Separate Copies	No	No Response	Total
Are enough textbooks and instructional materials available so that each student has a copy?	333	31	4	2	370

8. Number of Driver Education Vehicles Available (Q 17)

Table 8 provides information on the number of driver education vehicles available to the 370 reporting districts. Seven districts reported having no vehicles available, however, there is an unexplained discrepancy between this figure and information contained in the next question where only one district indicated having no vehicles available.

TABLE 8
No. of Driver Education Vehicles Available

No. of Vehicles	No. of Districts
0	7
1	174
2	97
3-5	59
6-8	14
9-11	6
12-14	5
15-17	1
18-20	0
21-25	2
26-30	1
31-35	0
36-40	2
41-50	1
51-60	1
61+	0
Total	370

9. How Driver Education Vehicles Are Obtained (Q 18)

The manner in which the various districts obtain their driver education vehicles is indicated in Table 9. The preponderance of districts obtain their vehicles by loan. Only 34 districts obtain their vehicles solely through purchase, lease, or a combination of these two methods.

TABLE 9
How Driver Education Vehicles Are Obtained

How Obtained	No. of Districts
Purchase	7
Lease	24
Loan	314
Purchase and Lease	3
Purchase and Loan	13
Lease and Loan	8
Purchase, Lease, and Loan	0
No Vehicles Available	1
No Response	0
Total	370

10. Written Agreements on Loaned Vehicles (Q 19)

Table 10 indicates that 12 districts which possess loaned vehicles do not have written agreements on these vehicles with car dealers.

NOTE: A discrepancy exists between this data and the information in section 9. Here only 11 districts indicated they had no loaned vehicles available, whereas, in the last section 36 districts indicated they obtained their vehicles by some method other than loan or said they had no vehicles available at all. It is probable that this discrepancy resulted from a misreading of this question on the part of respondents. Districts which had written agreements with car dealers on purchases of leased vehicles might have inadvertently answered "YES" to this question.

11. Credit for Driver Education (Q 20)

Table 11 shows the number of reporting districts which give credit toward graduation for driver education courses and also indicates the aspects of the driver education program for which credit is given. While 274 districts indicated they give no credit for any aspects of the program, 94 districts did give some credit. Of these 94, the majority, 75, give credit only for the classroom phase of the program and it is likely that in these cases classroom instruction is offered as part of another subject.

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TABLE 10
Written Agreements on Loaned Vehicles

	Number of Districts			
	YES	NO	No loaned vehicles available	Total
Do you have written agreements with car dealers on loaned vehicles?	347	12	11	370

TABLE 11
Credit Toward Graduation for Driver Education Courses

	No. of Districts
No credit is given	274
Credit is given for completion of both classroom and laboratory phases together	17
Credit is given for classroom and laboratory phases separately	2
Credit is given for classroom phase but not laboratory phase	75
Credit is given for laboratory phase but not classroom phase	0
No Response	2
Total	370

12. Number of Credits Given (Q 21)

Table 12 shows the number of credits given by the reporting districts for any aspect of their driver education program. Most districts (298) give no credit. Only 5 districts reporting give more than ½ credit for their programs.

TABLE 12
Number of Possible Credits Students May Receive for Driver Education Courses

No. of Possible Credits	No. of Districts
0	298
¼	47
½	18
¾	0
1	4
More than 1	1
No response	2
Total	370

A discrepancy exists between this Table and Table 11. Here 298 districts report giving no credits for their program while in Table 11 only 274 districts reported giving no credit. It is impossible to tell which of these figures is more accurate.

13. Grading of Students in Driver Education Programs (Q 22)

Table 13 shows the number of reporting districts which give grades for the driver education program and also indicates which aspects of the program are graded. No grades are given in 62 districts; 103 districts grade both the classroom and laboratory phases of the program; and 203 districts grade only the classroom phase.

It appears, in comparing this information with the previous two sections (11 and 12), that many districts give grades for the driver education program even though no credit is given for the program.

TABLE 13
Grading of Driver Education Students

	No. of Districts
No grades are given	62
One grade is given for completion of both classroom and laboratory phases	31
Classroom and laboratory phases are graded separately	72
Only classroom phase is graded	203
Only laboratory phase is graded	2
Total	370

14. Type of Grades Used (Q 23)

Table 14 indicates the type of grades which are used in the driver education programs. Most districts (199) use letter grades exclusively; 62 districts use only pass-fail grades; and 49 districts use some combination of letter grades and pass-fail grades. (See Table 14 on next page.)

A slight discrepancy exists between this Table where 60 districts reported using no grades and Table 13 where 62 districts reported using no grades.

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TABLE 14
Type of Grades Used in Driver Education Programs

	No. of Districts
No grades used	60
Pass-fail grades used exclusively	62
Letter grades used exclusively	199
Pass-fail grades used for classroom phase; letter grades used for lab. phase	2
Pass-fail grades used for laboratory phase; letter grades used for classroom phase	47
Total	370

15. Maintenance of Permanent Records (Q 24)

Table 15 shows that almost all districts—363 out of 370—maintain permanent records on all students completing the driver education program.

TABLE 15
Maintenance of Permanent Records

	No. of districts		
	Yes	No	Total
Are permanent records maintained for all students having completed your driver education program?	363	7	370

A. CLASSROOM PHASE

16. Is Classroom Phase Required? (Q 25)

Table 16 indicates the number of reporting districts which require that their students take the classroom phase of driver education. All reporting districts indicate that classroom instruction is available. It is a requirement in 300 districts; it is an elective in 69.

TABLE 16
Is Classroom Phase Required?

The classroom phase of Driver Ed. is:	No. of Districts
Required	300
An elective	69
Not offered	0
No Response	1
Total	370

17. How Classroom Phase Is Offered (Q 26)

Table 17 shows how classroom instruction is incorporated into the curriculum of the reporting districts. A few more than half of the districts, 197, offer it as a unit within another subject. The remainder, 172, offer it as a separate subject.

TABLE 17
How Classroom Phase Is Offered

The classroom phase of driver ed. is taught as:	No. of Districts
A separate subject	172
A unit within another subject	197
Not offered	0
No response	1
Total	370

18. Grade Level(s) at Which Classroom Instruction Is Offered (Q 27)

Table 18 shows the grade levels at which classroom instruction is offered by the reporting districts. Most districts offer classroom instruction at Grade 9 (185 districts) or Grade 10 (118 districts) exclusively. Twenty-two districts offered classroom instruction at 2 grade levels; 15 offered it at 3 grade levels; and 14 offered it in grades 9, 10, 11 and 12. Fifteen districts indicated they did not offer classroom instruction at all during the regular school year.

TABLE 18
Grade Level(s) at Which Classroom Instruction Is Offered During the Regular School Year

Grade Level	No. of Districts
9	185
10	118
11	1
12	0
9 and 10	20
10 and 11	2
11 and 12	0
9, 10, and 11	3
10, 11, and 12	12
9, 10, 11, and 12	14
Not offered during regular school year	15

19. Average Class Size in Classroom Phase (Q 28, 29, 30, 31)

Table 19 shows the average enrollment in the classroom phase of driver education when instruction is

TABLE 19

Average Size of Class During Classroom Phase When Instruction Is Offered at Various Times During the Year Reported by Districts

Instruction Offered:	Class Size															
	1-20	21-25	26-30	31-35	36-40	41-45	46-50	51-75	76-100	101-125	126-150	151 or more	Total offering classroom inst. at this time	Classroom phase not offered at this time	No Response	Total
During the regular school day	32	96	122	46	5	9	6	3	3	0	0	1	323	40	7	370
After school	14	4	14	7	8	1	4	2	2	3	0	1	60	295	15	370
On weekends	5	4	4	1	0	0	1	0	2	1	1	0	19	335	16	370
During the summer	18	12	17	11	3	4	4	5	1	1	4	0	80	278	12	370

TABLE 20

Average Length of Periods During Classroom Phase When Instruction Is Offered at Various Times During the Year Reported by Districts

Instruction Offered:	Length of Class Periods											
	20-30 min.	31-40 min.	41-50 min.	51-60 min.	61-75 min.	76-90 min.	91-120 min.	Longer than 120 min.	Total offering classroom ins. at this time	Clsrm. phase not offered at this time	No Response	Total
During regular school day	2	8	86	228	0	1	0	0	325	41	4	370
After school	1	0	4	21	0	8	20	3	57	298	15	370
On weekends	0	0	0	5	0	3	4	6	18	336	16	370
During the summer	0	0	2	21	0	7	38	13	81	276	13	370

offered at various times during the year.

Few districts teach the classroom phase to groups larger than 35.

Also indicated in Table 19 are the numbers of districts which offer the classroom phase at different times during the year. During the regular school day classroom instruction is offered by 323 of the reporting districts. After school hours it is offered by 60 districts, on weekends by 19 districts, and during the summer by 80 districts. Minor variations in these four figures appear in each of the following three tables (20, 21, 22).

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20. Average Length of Periods in Classroom Phase (Q 32, 33, 34, 35)

Table 20 indicates the average length of periods in the classroom phase when instruction is offered at various times during the year. The most common length of class periods is 51-60 minutes, especially during the regular school day. Also during regular school days 41-50 minute periods are often found. When classroom instruction is offered after school, on weekends, and during the summer, longer periods of 1½ to 2 hours or more are used most frequently. (See Table 20 on preceding page.)

21. Number of Instructional Periods Per Week in Classroom Phase (Q 36, 37, 38, 39)

Table 21 shows the number of times per week that students meet for instruction in the classroom phase when instruction is offered at various times during the year. The most common number of times during a week is five no matter when instruction is offered. One, two, or three class meetings a week are relatively frequent during the regular school day and after school. During the summer almost all districts offering instruction have concentrated five-day one-week programs. (This is considered as a low level of crash type program which must be discouraged.)

TABLE 21
Number of Times Per Week Which Students Meet for Instruction in Classroom Phase When Instruction Is Offered at Various Times of the Year Reported by Districts

Instruction Offered:	Number of Classroom Sessions One Week										
	1	2	3	4	5	6	7	Total offering classroom ins. at this time	Classroom Phase is not offered at this time	No Response	Total
During regular school day	34	55	43	4	185	1	0	322	43	5	370
After school	7	12	10	4	16	0	0	49	306	15	370
On weekends	9	0	0	0	Error 1	0	0	10	343	17	370
During the summer	0	1	1	1	69	0	0	72	285	13	370

TABLE 22
Total Number of Hours of Instruction in Classroom Phase When Instruction Is Offered at Various Times of the Year Reported by Districts

Instruction Offered:	Total Hours of Instruction										
	29 or less	30	31-36	37-45	46-60	61-90	91 or more	Total offering classroom ins. at this time	Classroom Phase is not offered at this time	No Response	Total
During regular school	1	105	126	68	11	9	3	323	41	6	370
After school	2	39	10	1	1	1	0	54	301	15	370
On weekends	2	9	1	0	0	0	0	12	341	17	370
During the summer	1	48	17	4	1	1	0	72	285	13	370

22. Total Hours of Instruction in Classroom Phase (Q 40, 41, 42, 43)

Table 22 shows the total number of hours of instruction in the classroom phase when instruction is offered at various times during the year. Although the programs of many districts exceed the minimum requirements of 30 hours of instruction, six programs were reported to be below this minimum standard. When the

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classroom instruction was offered during the regular school day it was most likely to include more hours than the minimum requirements.

B. LABORATORY PHASE

23. Is Laboratory Phase Required? (Q 44)

Table 23 shows the number of reporting districts which require that students take the laboratory phase of driver education. Only 96 districts out of 370 require students to take laboratory instruction. By comparison, 300 districts require students to take the classroom phase. (See Section 16)

Table 23 also indicates that only 7 reporting districts do not offer the laboratory phase of driver education at some time during the year. Although the figure of 7 varies somewhat in subsequent information (See Tables 25, 26, 30, and 31) it seems to be essentially correct.

TABLE 23
The Laboratory Phase of Driver Education Is:

	No. of Districts
Required	96
An elective	267
Not offered	7
Total	370

24. Grade Level(s) Where Laboratory Instruction Is Offered (Q 45)

Table 24 indicates the grade level(s) at which laboratory instruction is offered during the regular school year. About ⅓ of the reporting schools (121) offer the laboratory phase in the 10th grade; another third (139) offer it in grades 10, 11, and 12. A large number (82) report not offering laboratory instruction at all during the regular school year. The way the question was intended, this would mean that 82 schools offer the behind-the-wheel part of driver education during the summer or not at all. However, some respondents might have taken the question to mean during the regular school day.

25. How the Laboratory Phase Is Offered (Q 46)

Table 25 indicates how the reporting districts offer the laboratory phase with respect to the classroom phase. Almost all districts offer it after the classroom phase has been completed and most make it available to students at any time after the classroom instruction has been completed.

TABLE 24
Grade Level(s) at Which Laboratory Phase Is Offered During the Regular School Year

Grade Level	No. of Districts
10	121
11	3
12	1
10 and 11	23
10, 11, and 12	139
Not offered during regular school year	82
No Response	1
Total	370

TABLE 25
How Laboratory Phase Is Offered

During the regular school year the laboratory phase is offered:	No. of Districts
Concurrently with classroom instruction (a)	11
Immediately after classroom phase is completed (b)	45
At any time after classroom phase is completed (c)	206
a and b	9
a and c	9
b and c	60
a, b, and c	19
Laboratory phase is not offered	10
No Response	1
Total	370

26. Number of Students Per Vehicle (Q 47)

Table 26 shows the number of students normally assigned to each driver education vehicle during each instructional period. Almost all districts have two or three students per vehicle with the largest number of districts reporting only two students per vehicle. (See Table 26 on next page.)

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TABLE 26
Number of Students Per Vehicle

No. of Students	No. of Districts
1	20
2	210
3	127
4	8
5	0
Laboratory ins. not offered	4
No Response	1
Total	370

27. Length of Behind-the-Wheel Instruction/Student/Instructional Period (Q 48, 49, 50, 51)

Table 27 shows how the districts reported the length of behind-the-wheel instruction time each student received during each laboratory session at various times during the year. The most common lengths of instructional time per student were 20-30 minutes and 51-60 minutes.

It should be emphasized, however, that some of the data in this table is highly suspect when it is considered in conjunction with Table 26. Table 26 indicates that almost all schools assign two or three students to the driver education vehicle during each instructional period. Thus, as the instructional time per student increases, e.g. to 61-90 minutes and more, the amount of time the group must spend riding around in the instructional vehicle would seem to be getting rather extreme—particularly during and after regular school hours. This, of course, is possible. It may or may not be accurate. It may be that, in answering this question, some respondents took it to mean the amount of time each group spent in the instructional vehicle per session rather than the amount of instruction each student received during the training period. A heavy dark line has been used to separate the most suspect data from the data which appears most accurate.

Also included in Table 27 as well as Tables 28 and 29, is information regarding the number of districts which offer the laboratory phase of the driver education program at various times during the year. Although the figures do not match exactly, they are similar. According to Table 27, the laboratory phase is offered during the regular school day in 124 out of 370 districts. It is offered after school in 242 districts, on weekends in 191 districts, and during the summer in 318 districts.

When this information is compared to the times during the year when the classroom phase is offered (See Section III, Table 19) it is evident that the two phases of the driver education program in most districts are very staggered. The following summary of data from Table 19 and Table 27 will make this fact clear.

Number of Districts Offering Each Phase of the Driver Education Program

When Offered	Classroom Phase	Laboratory Phase
During regular school day	323	124
After school	60	242
On weekends	19	191
During the summer	80	318

28. Number of Times Per Week Each Student Receives Laboratory Instruction at Various Times During the Year (Q 52, 53, 54, 55)

Table 28 reports the number of times per week each student receives laboratory instruction at various times during the year. There appears to be no preferable number of times for instruction to be given with the exception of five times one week during the summer. Four times one week seems to be seldom used.

There appears to be a number of obvious inconsistencies in this data — particularly the reporting of the number of times instruction is offered on weekends and those schools reporting seven or more instructional periods per week. A heavy dark line separates the most suspect information from the more accurate data.

29. Number of Periods of Instruction Which Constitute a Complete Unit in the Laboratory Phase When Instruction Is Offered at Various Times During the Year (Q 56, 57, 58, 59)

Table 29 indicates the number of periods which constitute a complete unit in the laboratory phase when instruction is offered at various times during the year. The most common number of instructional periods per unit are 5-8 periods. Also relatively common are 11-12 periods. This corresponds with information from Table 27 which indicates that 20-30 minute periods and 51-61 minute periods are most often used and with Table 30 which shows 6-7 hours of behind-the-wheel experience to be the rule in most districts. (See Table 29 on page 18.)

30. Total Hours of Behind-the-Wheel Driving Experience (Q 60)

Table 30 shows the total amount of behind-the-wheel driving experience received by students in the reporting districts. More than half of the reporting districts (201) provide six hours of driving experience. Another ⅓ of the districts (120) provide from 7-9 hours of actual driving time. Nine districts provide 10 hours or more. Thirty districts provide less than six hours. (See Table 30 on page 18.)

TABLE 27

Length of Behind-the-Wheel Instruction for Each Student During One Instructional Period at Various Times During the Year

Reported by Districts

Instruction Offered:	Length of Instructional Period													
	Less than 20 min.	20-30 min.	31-40 min.	41-50 min.	51-60 min.	61-90 min.	91-120 min.	121-150 min.	151-180 min.	Longer than 3 hours	Total offering lab. ins. at this time	Lab. phase not offered at this time	No Response	Total
During regular school day..	7	41	11	19	41	2	1	1	1	0	124	234	12	370
After school.....	2	59	25	21	94	14	13	1	3	0	242	129	9	370
On weekends.....	1	37	16	17	87	10	15	2	5	1	191	165	14	370
During the summer.....	3	82	34	26	118	12	26	5	11	1	318	48	4	370

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TABLE 28

Number of Times Per Week Each Student Receives Laboratory Instruction at Various Times During the Year

Reported by Districts

Instruction Offered:	Number of Instructional Periods											
	1	2	3	4	5	6	7	More than 7	Total Offering lab. instruct. at this time	Lab. phase not offered at this time	No Response	Total
During regular school day.....	24	29	23	3	28	3	0	1	111	246	13	370
After school.....	64	68	30	10	50	2	0	1	225	135	10	370
On weekends.....	129	16	7	3	13	4	0	1	173	181	16	370
During the summer.....	38	50	58	9	135	18	1	2	311	52	7	370

TABLE 29

Number of Periods of Instruction Which Constitute a Complete Unit in the Laboratory Phase When Instruction Is Offered at Various Times During the Year Reported by Districts

Instruction Offered:	Number of Instructional Periods														Total
	Less than 5	5-6	7-8	9-10	11-12	13-14	15-16	17-18	More than 18	No. offering laboratory ins. at this time	Lab. phase not offered at this time	No Response	
During regular school day	2	26	19	7	16	9	10	10	17	116	238	16	370
After school	4	56	49	24	42	26	8	9	11	229	129	12	370
On weekends	10	50	44	17	28	17	4	3	7	180	172	18	370
During the summer	3	73	71	30	64	31	13	12	15	312	49	9	370

TABLE 30

Actual Behind-the-Wheel Driving Experience Received by Each Student

No. of Hours	No. of Districts
Less than 3	2
3	13
4	13
5	2
6	201
7	71
8-9	49
10-11	3
12 or more	6
Laboratory phase not offered	7
No Response	3
Total	370

31. Inclusion of Units Concerning Emergency Situations (Q 61)

Table 31 shows the number of reporting districts which include special units concerning emergency situations in their laboratory phase. Such units are taught in 267 districts and are not taught in 95 districts.

32. Use of Driving Simulators (Q 62)

Table 32 shows the number of reporting districts using driving simulators in the laboratory phase. All driver education students in 14 districts utilize simulators. Some students in three other districts use them. They are not available in 353 districts.

33. Interest in Simulators (Q 63)

Table 33 concerns the districts' interests in using driving simulators in the driver education program. Only 30 districts not presently using simulators expressed a strong interest in them. One hundred and sixty-six districts stated they were somewhat interested while 159 districts stated that they were not interested in simulators as an instructional technique.

34. Use of Off-Street Driving Range (Q 64)

Table 34 reports the use of off-street driving ranges in the driver education programs. All students in 57 districts receive instruction on an off-street driving range. It is used by some students in 9 districts. It is not available in 303 districts.

35. Interest in Off-Street Driving Range (Q 65)

Table 35 shows the feelings of the reporting districts regarding the incorporation of an off-street driving range into the driver education program. One hundred and seventy districts said they were not interested; 136 were somewhat interested; and 22 reported strong interest. In answer to this question, 39 districts said they were already using an off-street driving range in contrast to the 66 districts in Table 34 who reported using an off-street range. It is impossible to account for this difference.

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TABLE 31

Inclusion of Units Concerning Emergency Situations

	Number of Districts				
	Yes	No	Laboratory Phase Is Not Offered	No Response	Total
Are special units concerning emergency situations taught during the lab. phase?	267	95	7	1	370

TABLE 32

Use of Driving Simulators in Laboratory Instruction

	No. of Districts
All students use them	14
Used by some students but not available to all students	3
None available	353
Total	370

TABLE 33

Districts' Interests About Incorporating Driving Simulators into Driver Education Program

	No. of Districts
Not interested (a)	159
Somewhat interested (b)	166
Strongly interested (c)	30
Already use simulators (d)	10
b and d	3
c and d	1
No Response	1
Total	370

TABLE 34

Use of Off-Street Driving Ranges in Laboratory Instruction

	No. of Districts
All students use it	57
Used by some students but not available to all students	9
Not available	303
No Response	1
Total	370

TABLE 35

Districts' Interests About Incorporating an Off-Street Driving Range into Driving Education Program

	No. of Districts
Not interested (a)	170
Somewhat interested (b)	136
Strongly interested (c)	22
Already use off-street driving range (d)	37
b and d	1
c and d	1
No Response	3
Total	370

C. STAFF AND ADMINISTRATION

36. Instructors and Supervisory Personnel, Full- and Part-Time, 1968-69 and 1969-70 (Q 66-70)

Table 36 shows the number of reporting districts employing various numbers of full- and part-time driver education instructors during the 1968-69 and 1969-70 school years and the change between these two years. In addition, the number of districts employing various numbers of instructors and/or supervisors either full- or part-time during the summer of 1969 is shown. (See Table 36 on next page.)

About ⅔ of the districts do not employ driver education personnel full-time. Of those districts who do have full-time personnel, only four report having more than five people employed in this area (1969-70).

Some rather large changes in the number of reporting districts employing part-time personnel have occurred in the last year. The number of districts employing no part-time personnel dropped by 51 between the 1968-69 and 1969-70 school years. The number of districts employing one part-time person has increased by 34 over the past year and the number of districts employing two part-time driver education personnel has increased by 18.

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TABLE 36

Full- and Part-Time Instructors and/or Supervisory Personnel—1968-69 and 1969-70 Reported by Districts

	Number of Instructors and/or Supervisors																		
	0	1	2	3	4	5	6-10	11-15	16-20	21-25	26-30	31-40	41-50	51-60	61-70	71-80	81 and above	Not applicable	No Response	Total
Full-time instructors and/or supervisors (68-69)	243	85	23	7	2	2	0	0	0	0	0	0	0	0	0	0	0	6	2	370
Full-time instructors and/or supervisors (69-70)	247	79	16	9	4	2	3	0	0	0	0	1	0	0	0	0	0	5	4	370
CHANGE	+4	−6	−7	+2	+2	0	+3	0	0	0	0	+1	0	0	0	0	0			
Part-time instructors and/or supervisors (68-69)	152	96	53	22	11	3	13	4	4	2	1	1	2	0	0	0	0	3	3	370
Part-time instructors and/or supervisors (69-70)	101	130	71	20	9	8	13	7	4	1	1	2	1	0	0	0	0	2	0	370
CHANGE	−51	+34	+18	−2	−2	+5	0	+3	0	+1	0	+1	−1	0	0	0	0			
Instructors and/or supervisors (summer of 1969) (full—or part-time)	51	151	59	30	20	11	17	11	4	5	1	2	1	0	0	0	0	4	3	370

37. Instructors Employed Between September 1968 and August 1969 Who Were Not Fully Certificated (Q 71)

Table 37 shows the number of reporting districts that employed driver education instructors between September 1968 and August 1969 who were *not* fully certificated. (Certification requires 12 quarter hours of Safety and Driver Education Courses.) A total of 91 districts reported that they employed non-certificated driver education personnel during this time period while 273 districts reported all instructors to be fully certificated.

TABLE 37

Number of Instructors Employed from September 1968—August 1969 Who Were Not Fully Certificated

Number of Instructors	Number of Districts
0	273
1	36
2	16
3	15
4	2
5–7	6
8–10	5
11–13	5
14–16	2
17–19	0
20–22	1
23–25	1
26–35	0
36–45	0
46–55	2
56–65	0
66 and above	0
No Response	6
Total	370

38. Methods of Payment of Classroom Phase and Laboratory Phase Instructors When They Teach at Various Times During the Year (Q 72-79)

Table 38 shows the number of reporting districts using methods of paying driver education instructors

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TABLE 38

Methods of Payment of Classroom and Laboratory Phase Instructors When They Teach at Various Times During the Year Reported by Districts

	Method of Payment										
Classroom phase of instructional teaching:	Same basic salary schedule as other teachers	% of regular yearly salary	Based on number of students taught	By the day	By the hour	Based on experience in driver education	Other method	Comb. of preceding methods	This phase of driver ed. is not offered at the time	No Response	Total
During regular school day	277	6	1	0	11	2	5	4	55	9	370
After school	8	6	6	0	70	1	5	4	255	15	370
On weekends	4	3	2	0	41	1	3	2	297	17	370
During the summer	10	16	8	0	77	1	11	3	233	11	370
Laboratory phase of instructional teaching:											
During regular school day	80	3	7	0	29	2	3	3	230	13	370
After school	6	4	19	0	199	1	7	5	120	9	370
On weekends	4	3	18	0	161	1	5	3	161	14	370
During the summer	7	13	27	8	236	2	18	7	48	4	370

and how these methods of payment vary when the instructors work at various times during the year. While a number of different methods of payment are used, certain methods are more commonly used than others depending on whether the instruction is classroom or laboratory instruction and when it is offered.

For instructors who teach the classroom phase during the regular school day, payment is generally based on the same salary schedule as for other teachers (277 districts). When classroom instruction is given at any time other than during the regular school day, payment by the hour is the most common.

This same pattern holds true for payment to instructors teaching the laboratory phase. When instruction is during the regular school day, payment is usually based on the same salary schedule as for other teachers. When laboratory instruction is at some time other than during the regular school day, payment by the hour is the rule.

Payment by the day is the least common of all the possible methods. This method is used by only eight districts and is only used to pay laboratory phase instructors during the summer.

TABLE 39

Special Orientation Programs for Driver Education Instructors Offered at the Beginning of Each Program

	No. of Districts
Offered	53
Not Offered	316
No Response	1
Total	370

39. Special Orientation Programs for Instructors Offered at the Beginning of Each Program (Q 80)

Table 39 shows the number of reporting districts offering special orientation programs for driver education instructors at the beginning of each program. A total of 53 districts reported offering such programs while 316 districts did not offer them.

40. Frequency of In-Service Training Programs for Driver Education Instructors (Q 81)

Table 40 shows the number of reporting districts which conduct in-service training programs for instructors and how often they are conducted. In all, 277 districts reported that they did not conduct an in-service training program while 91 districts reported that they did. Of these 91, 76 districts reported conducting in-service driver education programs once a year, 8 districts twice a year, 3 districts quarterly, 3 on a monthly basis, and 1 district reported a program on a weekly basis.

TABLE 40

Frequency of In-Service Training Programs for Driver Education Instructors

	No. of Districts
Not at All	277
Annually	76
Semi-annually	8
Quarterly	3
Monthly	3
Weekly	1
No Response	2
Total	370

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IV. Individual Instructor Questionnaire Results

1. Education Completed as of January 1970 (Q 1)

Table 1 shows the education completed as of January 1970 by the responding 1,260 driver education instructors. All respondents had completed at least a bachelor's degree and all but 134 had received credit beyond.

Table 1
Education Completed as of January 1970

	No. of Instructors
Less than a bachelor's degree	0
Bachelor's degree	134
Bachelor's degree plus some graduate work	683
Master's degree	227
Master's degree plus some work toward a doctorate	213
Doctorate	0
More than a doctorate	1
No Response	2
Total	1,260

2. Areas of Concentration in College Work (Q 2 & 3)

Table 2 shows the areas of concentration in college work reported by the responding driver education instructors. The table is divided into major and minor fields, but the data is actually not as clean as it appears. A number of respondents listed multiple majors and/or minors; some listed multiple majors and no minors; etc. These variations do not appear in the table. As a result, it is more accurate to think of Table 2 as showing general areas of concentration of the respondents. Also included in Table 2 are (1) the rank orders of each area of concentration as determined by the numbers of respondents reporting each area as a major or minor field and (2) a ranking of the areas when the major and minor areas are combined. (See Table 2 on next page.)

The following is a summary of the top five major, minor, and combined areas of concentration in rank order. (Taken from Table 2)

Rank	Major Field		Minor Field		Combined	
1	Physical Education	(303)	Social Sciences	(233)	Physical Education	(521)
2	Industrial Arts	(190)	Physical Education	(218)	Social Sciences	(407)
3	Social Sciences	(174)	Sciences	(193)	Sciences	(319)
4	Sciences	(126)	Other	(177)	Industrial Arts	(218)
5	Mathematics	(121)	History	(120)	Mathematics	(215)

3. Certificated Driver Education Instructors (Q 4)

Table 3 shows the number of responding instructors who are and are not certificated to instruct driver education in Minnesota. Certification requires at least 12 quarter hours of Safety and Driver Education courses. Through an oversight this standard was not specified in the question so it is possible that some instructors were not aware of what constituted the present certification requirements. A total of 1,212 instructors reported they were certificated while 43 indicated they were not. (See Table 3 on next page.)

4. Where Major Part of College Credit in Driver Education Was Received (Q 5)

Table 4 shows where responding instructors received the major part of their college credit in driver education. The University of Minnesota was the training school for the largest number of instructors (284) followed closely by Mankato (257). The third largest group (168) received most of their credit from schools outside of Minnesota. (See Table 4 on page 25.)

5. Last Year in Which College Credit Was Received for Any Driver Education Course (Q 6)

Table 5 shows the last year in which responding instructors received any college credit for driver education courses. More than ¼ of the respondents (386) received some credit within the last 3 years (1967-69) and more than ⅓ (477) received some credit within the last 4 years (1966-69). (See Table 5 on page 25.)

Compared with the figures in Section IV, Table 8, these figures in Table 5 indicate that a large number of driver education instructors are returning to school to take either additional instruction in driver education or to take initial courses to prepare themselves for new roles as driver education instructors.

6. Number of Quarter Credit Hours Earned in Driver Education or Related Subjects (Q 7)

Table 6 indicates the number of quarter credit hours earned by instructors in driver education or related subjects. These figures show that between 957 and 1110 of the 1260 responding instructors have less than 12 quarter hours of driver education or related subjects. These data are greatly at odds with the reports on certification given by instructors (Section IV, Table

TABLE 2
Areas of Concentration in College Work

Areas of Concentration	Major Field		Minor Field		Combined No. of respondents in major and minor fields	Combined rank
	No. of Responses	Rank	No. of Responses	Rank		
Administration	41	9	16	11	57	11
Agriculture	3	14	5	14	8	14
Business Ed.	55	7	65	8	120	8
Elementary Ed.	53	8	12	13	65	10
English	30	12	69	7	99	9
Foreign Language	18	13	17	10	35	13
Guidance and Counseling	35	10	16	11	51	12
History	77	6	120	5	197	7
Industrial Arts	190	2	28	9	218	4
Mathematics	121	5	94	6	215	5
Physical Ed.	303	1	218	2	521	1
Sciences	126	4	193	3	319	3
Social Sciences	174	3	233	1	407	2
Other	32	11	177	4	209	6
No Response	2	15	3	15	5	15
Total	1,260		1,260		1,260	

TABLE 3
Instructors Certificated in Driver Education in Minnesota

	No. of Instructors
Certificated	1,212
Not Certificated	43
No Response	5
Total	1,260

3) where 1212 instructors reported themselves to be certificated. With 12 quarter hours as the standard for certification, Table 6 shows that at least 957 instructors are not meeting certification requirements. This large discrepancy may be the result of the recent upgrading in certification standards and unfamiliarity with the new standards by the instructors.

7. Adequacy of Driver Education Courses in Preparing Instructors to Teach Subject (Q 8)

Table 7 indicates how well the responding instructors feel the courses they have taken in driver education have prepared them to teach the subject. Almost 89% (1120) say they have been prepared "Very Well" or "Satisfactorily."

Given the 1120 instructors who feel their preparation to teach driver education has been "Satisfactory" or better, and the 1110 instructors (Section IV, Table 6) who fall below or just meet certification standards, it would appear that the instructor's conception of adequate preparation and that of the Department of Education are somewhat divergent. (See also Section IV, Table 20)

8. Number of Years Teaching Any Subject and Teaching Driver Education (Q 9 & 10)

Table 8 shows the number of years that respondents have been teaching any subject and the number of years

TABLE 4

School Where Major Part of College Credit in Driver Education Was Received

	No. of Instructors
Bemidji	68
Concordia	23
Hamline	14
Mankato	257
Moorhead	113
St. Cloud	126
University of Minnesota	284
University of Minnesota, Duluth	83
Winona	62
Other schools in Minnesota	8
Schools outside Minnesota	168
Equal numbers of credits from 2 or more of the above schools	30
Never took any college level courses in D. E.	20
No Response	4
Total	1,260

TABLE 5

Last Year in Which College Credit Was Received for Any Driver Education Course

	No. of Instructors		
1969	185	386	477
1968	118		
1967	83		
1966	91		
1965	71		
1964	78		
1963	57		
1962	61		
1961	55		
1960	54		
1956-59	203		
1952-55	91		
1948-51	39		
1944-47	1		
Before 1944	1		
Never had any college courses in Driver Education	27		
No Response	45		
Total	1,260		

TABLE 6

Number of Quarter Credit Hours Earned in Driver Education or Related Subjects

	No. of Instructors				
0	31	367	758	957	1110
1-3	336				
4-6	391				
7-9	199				
10-12	153				
13-15	48				
16-18	20				
19-21	4				
21-24	7				
25 or more	14				
No Response	57				
Total	1,260				

TABLE 7

Adequacy of Driver Education Courses in Preparing Instructors to Teach Subject

How well have courses taken in driver ed. prepared you to teach the subject?	No. of Instructors	
Very well	459	1120
Satisfactorily	661	
Poorly	81	
Have not taken any course in D. E.	17	
No Response	42	
Total	1,260	

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they have been teaching driver education. The average number of years which the respondents have spent teaching any subject is 12.15 while they have averaged 7.41 years teaching driver education. Most seem to have taught other subjects for a few years before they began instructing driver education. Only 16.5% (208) continue instructing driver education after 10-12 years.

TABLE 8
Number of Years Teaching Any Subject and Teaching Driver Education

Number of Years	Number of Instructors	
	Teaching Any Subject	Teaching Driver Ed.
Less than 1	33	86
1	11	34
2	29	98
3	39	131
4-6	177	342
7-9	203	197
10-12	249	162
13-15	134	77
16-18	110	73
19-21	112	37
21-24	56	19
25 or more	67	2
No Response	40	2
Total	1,260	1,260

9. Amount of Time Devoted to Driver Education Program During 1968-69 and 1969-70 School Years (Q 11 & 12)

Table 9 indicates the amount of time the responding instructors devoted to the driver education program last year and this year during the regular school years. The number of both full time and part time (less than 80% time) instructors increased this year over last year with the number of full time instructors increasing by 17 (14.8%) and the number of part time instructors increasing by 56 (6.2%).

10. Normal Daily Teaching Load in District (Q 13)

Table 10 shows the normal daily teaching load in the districts of the responding instructors. The majority (865) teach in districts where the teaching load is 5 hours per day. Another sizeable number (264) teach 6 hours per day. Only a few teach 4 hours or less or 7 hours or more per day.

TABLE 9
Amount of Time Devoted to Driver Education Program during 1968-69 and 1969-70 School Years

Amount of Time	Number of Instructors		
	1968-69	1969-70	Increase Decrease
Full time (80% time or more)	115	132	+17
Part time (Less than 80% time)	898	954	+56
Did not teach D. E. at this time	244	171	−73
No Response	3	3	
Total	1,260	1,260	

TABLE 10
Normal Daily Teaching Load in District

Number of Hours	Number of Instructors
Less than 4 hours	26
4 hours	18
5 hours	865
6 hours	264
7 hours	66
8 hours	16
More than 8 hours	5
No Response	6
Total	1,260

11. Number of Hours Per Normal School Day Spent Teaching Driver Education (Q 14)

Table 11 shows the amount of time spent by the responding instructors teaching driver education during a normal school day. Most instructors (743 or 59%) do not teach driver education during the day. Of the 515 who do teach during the day 344 (66.8%) teach less than 2 hours per day.

12. Number of Days Per Week Teaching Driver Education Last Summer — 1969 (Q 15)

Table 12 shows the number of days per week the responding instructors spent teaching driver education

during the summer of 1969. Most instructors (936 or 74.2%) worked during the summer. Of those who did work, *860* or *91.9%* worked 5 or 6 days a week.

TABLE 11
Number of Hours Per Normal School Day Spent Teaching Driver Education

Number of Hours	No. of Instructors		
Less than 1 hour	168	344	
1 hr.—1 hr., 59 min.	176		
2 hrs.—2 hrs., 59 min.	86		515
3 hrs.—3 hrs., 59 min.	24		
4 hrs.—4 hrs., 59 min.	19		
5 hrs.—5 hrs., 59 min.	30		
6 hrs.—6 hrs., 59 min.	9		
7 hrs.—7 hrs., 59 min.	2		
8 hrs. or more	1		
Do not teach D. E. during normal school day	743		
No Response	2		
Total	1,260		

TABLE 12
Number of Days Per Week Spent Teaching Driver Education Last Summer

Number of Days	No. of Instructors		
Did not teach D. E.	313		
1	9		
2	11		
3	27		936
4	26		
5	762	860	
6	98		
7	3		
No Response	11		
Total	1,260		

13. Number of Hours Per Week Teaching Driver Education Last Summer — 1969 (Q 16)

Table 13 shows the number of hours per week the responding instructors spent teaching driver education during the summer of 1969. Similar to Table 12, 311 instructors indicated they did not teach driver education last summer. Of the 937 who did teach, 144 (15.4%) taught less than 20 hours a week, 739 (78.9%) taught from 21-40 hours a week, while 54 indicated that they taught more than 40 hours per week.

14. Comparison of the Number of Instructors Teaching Driver Education During 1968-69 and 1969-70 School Years (Q 17 & 18)

Table 14 shows the number of responding instructors who taught driver education during the 1968-69 and 1969-70 school years. "During the school year" includes instruction given during the school day, after school, on weekends, or any combinations of these times. Thus, during the 1968-69 school year 579 (46%) of the responding instructors taught driver education at some time other than during the summer months or not at all. The figure of 572 for the current school year represents a drop of 7 instructors since last year. (See Table 14 on next page.)

TABLE 13
Number of Hours Per Week Spent Teaching Driver Education Last Summer (1969)

Number of Hours	No. of Instructors		
0-Did not teach D. E.	311		
1-10	37	144	
11-20	107		
21-30	467	739	937
31-40	272		
41-50	44		
51-60	8		
61-70	0	54	
71 or more	2		
No Response	12		
Total	1,260		

15. Comparison of the Number of Instructors Teaching Driver Education on Saturdays During the 1968-69 and 1969-70 School Years (Q 19 & 20)

Table 15 shows the number of responding instructors who taught driver education on Saturdays during the 1968-69 and 1969-70 school years. There were 23 more instructors teaching on Saturdays during the current school year as compared to the 1968-69 school year. (See Table 15 on next page.)

16. General Responsibilities of Driver Education Instructors During Current School Year (Q 21-36)

Table 16 indicates the general responsibilities of the responding instructors within their districts during the current school year based on a scale of the percent of time the instructor devotes to various teaching or administrative areas. Unfortunately this question and the response choices were not as clear as would have been desirable. Some instructors combined their answer to this set of questions (which was intended to find out how they spent their classroom time) with the following set of questions, Table 17, (which was intended to find out how they spent their extracurricular time). Including "Junior High School" as a separate category caused a good deal of confusion for those instructors who taught a particular subject in junior high school. (See Table 16 on page 29.)

A respondent who indicated he spent 50% time or

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TABLE 14

Comparison of the Number of Instructors Teaching Driver Education During 1968-69 and 1969-70 School Years

Instructional Period	Number of Instructors			
	Teaching	Not Teaching	No Response	Total
Sept. 1968-June 1969 School Year	579	671	10	1,260
Sept. 1969-June 1970 School Year	572	678	10	1,260
Change	−7	+7	—	—

TABLE 15

Comparison of the Number of Instructors Teaching Driver Education on Saturdays During the 1968-69 and 1969-70 School Years

Instructional Period	Number of Instructors			
	Teaching	Not Teaching	No Response	Total
Saturdays during the Sept. 1968-June 1969 School Year	355	895	10	1,260
Saturdays during the Sept. 1969-June 1970 School Year	378	872	10	1,260
Change	+23	23	—	—

more instructing junior high school or indicated on the first page of the questionnaire that he taught in a junior high school was coded as teaching 100% time in a junior high. Otherwise his time was divided between "Junior High School" and a subject area.

Some instructors' responses added to more than 100%, others added to less than 100%. As a result of these and other factors, the reliability of the data included in this Table, and Table 17 which follows, is questionable.

What the data does show, however, is that the driver education instructors are involved in a variety of activities with relatively few instructors spending 100% of their classroom time teaching a single subject.

17. Responsibilities of Driver Education Instructors in Extra-Curricular Activities During Current School Year (Q 37-42)

Table 17 indicates the general responsibilities of responding instructors for extra-curricular activities within their districts during the current school year. As indicated in the explanation of Table 16, the data included in this Table are of questionable reliability—for similar reasons. Ideally these two sets of questions should have been combined so that the instructor's responsibilities for classroom and extra-curricular activities would have added to 100% overall. (See Table 17 on page 30.)

Table 17 does show that a large number of driver education instructors are involved in activities not listed while clubs take up part of the time of another group. Presumably those instructors who are heavily involved in extra-curricular activities would not be able to spend much time instructing driver education after school.

18. Interest in Possible Course Offerings in Traffic and Safety Education (Q 43-56)

Table 18 shows the degree of interest among responding instructors in possible course offerings related to driver education. Based on the number of instructors who said they were "Very Interested" in particular courses, 5 courses stand out from the others. In order of the number of "Very Interested" responses, the 5 were:

1. Principles of Accident Prevention (867-68.9%)
2. Driving Behavior and Personality (800-63.5%)
3. Innovative Methods in Driver Education (764-60.6%)
4. Problems in Driver Education (683-54.2%)
5. Alcohol and the Driver (661-52.3%)

(See Table 18 on page 31.)

TABLE 16
General Responsibilities of Driver Education Instructors During 1969-70 School Year

Areas of Resp.	Number of Instructors: Percent of Time Spent in Each Activity: 1-10 %	11-20 %	21-30 %	31-40 %	41-50 %	51-60 %	61-70 %	71-80 %	81-90 %	91-100 %	Total involved in each area	Does not apply	No Response	Total
Administration	51	13	4	3	11	4	7	6	8	25	136	1,124	4	1,260
Agriculture	0	0	0	0	0	0	0	1	0	1	2	1,254	4	1,260
Business Ed.	12	6	3	4	3	1	4	8	10	26	77	1,179	4	1,260
Driver Ed.	421	39	75	27	11	1	3	9	6	23	815	441	4	1,260
Elementary Ed.	5	4	3	3	3	1	1	4	9	34	67	1,189	4	1,260
English	4	3	3	5	4	4	3	8	1	10	45	1,211	4	1,260
Foreign Language	0	4	2	1	0	0	3	2	1	7	20	1,236	4	1,260
Guid. & Counseling	32	10	8	3	2	0	1	2	10	30	98	1,158	4	1,260
History	11	10	12	19	15	5	4	16	16	23	131	1,125	4	1,260
Industrial Arts	2	3	2	5	4	6	5	31	42	82	182	1,074	4	1,260
Jr. High School	2	4	5	2	1	1	1	3	3	268	290	966	4	1,260
Mathematics	13	15	3	6	8	5	12	25	20	65	172	1,084	4	1,260
Physical Ed.	27	17	13	16	19	24	21	26	35	60	258	998	4	1,260
Sciences	10	17	10	8	7	9	7	12	25	63	168	1,088	4	1,260
Social Studies	18	27	16	20	23	16	12	33	35	50	250	1,006	4	1,260
Other	99	55	28	13	9	5	8	10	9	21	257	999	4	1,260

TABLE 17

Responsibilities of Driver Education Instructors in Extra-Curricular Activities During 1969-70 School Year

Areas of Resp.	Number of Instructors												
	Percent of Time Spent in Each Activity										Total involved in each area	Does not apply	No Response	Total
	1-10 %	11-20 %	21-30 %	31-40 %	41-50 %	51-60 %	61-70 %	71-80 %	81-90 %	91-100 %				
Coaching	13	8	11	9	21	9	18	29	20	452	590	669	1	1,260
Speech and/or Debate	5	3	3	1	2	0	0	0	0	10	24	1,235	1	1,260
Dramatics	4	2	3	1	2	0	0	0	0	3	15	1,244	1	1,260
Clubs	40	20	12	4	15	0	1	2	1	41	136	1,123	1	1,260
Journalism	6	1	1	2	5	0	0	2	0	8	25	1,234	1	1,260
Others	23	22	9	6	27	8	8	19	12	178	312	947	1	1,260

19. Interest in Any of Previously Mentioned Courses If Available (Q 57)

Table 19 indicates the number of responding instructors who would actually take any of the courses listed in Table 18 if they were available. Almost all of the instructors said they would take courses if they had the opportunity.

TABLE 19

Interest in Any of Previously Mentioned Courses

	No. of Instructors
Would take one or more courses if available	1,165
Would not take any courses	94
No Response	1
Total	1,260

20. Attitude Toward Higher Certification Standards (Q 58)

Table 20 indicates the attitudes of responding instructors toward higher certification standards for driver education instructors and supervisors. Higher standards were favored by 768 instructors while 491 did not favor higher standards.

TABLE 20

Attitude Toward Higher Certification Standards for Driver Education Instructors and Supervisors

	No. of Instructors
Favor Higher Standards	768
Do Not Favor Higher Standards	491
No Response	1
Total	1,260

TABLE 18

Interest in Possible Course Offerings in Traffic and Safety Education

Possible Courses	Number of Instructors Degree of Interest				
	Very Interested	Somewhat Interested	Not Interested	No Response	Total
Driving Behavior & Personality	800	367	92	1	1,260
Highway Engineering & Traffic Control	332	709	218	1	1,260
Motor Vehicle Administration	140	563	556	1	1,260
Basic Auto Mechanics & Auto System	256	608	395	1	1,260
Principles of Accident Prevention	867	333	59	1	1,260
Alcohol and the Driver	661	452	146	1	1,260
Motorcycles	288	550	421	1	1,260
Transportation System	123	509	627	1	1,260
Research Tech. Related to Traffic Safety	350	582	327	1	1,260
Motor Vehicle Law & Enforcement	577	533	149	1	1,260
Administration & Supervision of Safety Education	367	580	312	1	1,260
Innovative Methods in Driver Ed.	764	388	107	1	1,260
Basic Simulation & Range Instruct.	503	533	223	1	1,260
Problems in Driver Education	683	443	133	1	1,260

V. Appendix

COVER LETTER SENT TO ALL SECONDARY SCHOOL SUPERINTENDENTS

TO: All Secondary Superintendents

FROM: Farley Bright, Deputy Commissioner
Department of Education

RE: Traffic Safety Education Survey

DATE: January 23, 1970

In our effort to upgrade driver education, we must have data based upon present programs in Traffic Safety and personnel. This data is being compiled in such a manner that it can be stored in a computer bank and be readily available at all times.

You will notice that there are two different types of questionnaires. The *Program Information Questionnaire* solicits information from each school district. One copy of this questionnaire is included for each district.

The *Personnel Information Questionnaire* asks for information about the Traffic Safety Education personnel in each district. One of these questionnaires must be answered by each instructor in your district who is involved in the Traffic Safety Education Program. Since our office does not know how many driver education instructors are presently employed in each district, the number of Personnel Information Questionnaires enclosed may not be sufficient. Additional copies may be obtained by writing to Gene Bealka, Office of Traffic and Safety Education at this address or you may duplicate additional copies yourself. It is recognized that a concentrated effort may be needed to locate all of these individuals but it is essential that personnel needs, present and future, be determined.

It is extremely important that all the questionnaires be completed and returned to the Department of Education no later than February 10, 1970.

The information requested in this survey will be utilized in a number of ways: our annual reporting to the Federal Government; teacher preparation curriculum planning; extension course offerings; future programming by the Department of Education; and establishing standards and teacher certification guidelines to future legislation.

Your cooperation and assistance regarding this survey is appreciated.

FB:GB:geh

January 1970

State of Minnesota

Department of Education

Traffic Safety Education Survey

PROGRAM INFORMATION QUESTIONNAIRE

This questionnaire is a comprehensive form designed to solicit general information about the Traffic Safety Program in each school district in Minnesota.

It has been designed in such a manner that the data may be transferred directly from this form to computer data cards. Although at times the responses to some of the questions may seem somewhat redundant, it is essential that *all* of the questions be answered and that each question be answered only once. Be sure to consider all possible responses before answering.

Please write the *letter* of the *one* best response for each question in the blank provided.

Name of person answering questionnaire: _____
(Last) (First) (Initial)

Title: _____

School District: _____ _____
(Number) (Name of District)

Please use the letters of the following responses to answer each of the next 8 questions. Read each question carefully.

Responses:

a. 0
b. 1 - 25
c. 26 - 50
d. 51 - 100
e. 101 - 200
f. 201 - 300
g. 301 - 400
h. 401 - 500
i. 501 - 750
j. 751 - 1,000
k. 1,001 - 1,350
l. 1,351 - 1,500
m. 1,501 - 2,000
n. 2,001 - 2,500
o. 2,501 - 3,000
p. 3,001 - 3,500
q. 3,501 - 4,000
r. 4,001 - 4,500
s. 4,501 - 5,000
t. 5,001 - 5,500
u. 5,501 and above

1. ____ What is the total number of *public school* students who were eligible to participate in your district's driver education program *last year?* (September 1968 - August 1969)
Of those public school students who were eligible for your district's driver education program *last year* (see previous question), how many completed:

2. ____ Both the classroom and laboratory phases?

3. ____ The classroom phase only?

4. ____ The laboratory phase only?

5. ____ How many *parochial-private* school students were eligible to participate in your district's driver education program *last year?* (September 1968 - August 1969)

6. ____ Of those parochial-private school students who were eligible for your district's driver education program *last year* (see previous question), how many completed *any* aspect of the program?

7. ____ What is the total number of public school students who are eligible to participate in your district's driver education program *this year?* (September 1969 - August 1970)

8. ____ How many parochial-private school students are eligible to participate in your district's driver education program *this year*? (September 1969 - August 1970)

9. ____ Is driver education in your district available to drop outs?
   a. Yes
   b. No

10. ____ Is there a *separate* driver education program in your district for special education students (Educable Mentally Retarded)
   a. Yes
   b. No

11. ____ Is there a *separate* driver education program in your district for physically handicapped students?
   a. Yes
   b. No

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We are interested in knowing whether or not you charge any special fees for those who participate in your district's driver education program and, if so, how much you charge. Please use the *letters* identifying the following responses to answer *each* of the next 3 questions.

Responses:
a. Nothing
b. $5.00 or less
c. $5.01-$10.00
d. $10.01-$15.00
e. $15.01-$20.00
f. $20.01-$25.00
g. $25.01-$30.00
h. $30.01-$35.00
i. $35.01-$40.00
j. $40.01-$45.00
k. $45.01-$50.00
l. $50.01-$55.00
m. $55.01 and above
n. Question is not applicable

Question:
How much do you charge for your driver education program when the student:

12. ____ Receives both classroom and laboratory instruction during regular school hours.

13. ____ Receives classroom instruction during school hours and laboratory instruction at some time other than during regular school hours.

14. ____ Receives both classroom and laboratory instruction outside of regular school hours.

15. ____ Do you have a written curriculum guide in driver education for your district?
a. Yes
b. Not at the moment; however, one is being prepared
c. No

16. ____ Are enough textbooks and instructional materials available so that each student has a copy?
a. Yes
b. We have materials available but not separate copies for each student.
c. No

17. ____ How many driver education vehicles does your district have available?
a. 0
b. 1
c. 2
d. 3-5
e. 6-8
f. 9-11
g. 12-14
h. 15-17
i. 18-20
j. 21-25
k. 26-30
l. 31-35
m. 36-40
n. 41-50
o. 51-60
p. 61 or more

18. ____ How do you obtain your driver education vehicles?
a. Purchase
b. Lease
c. Loan
d. a and b
e. a and c
f. b and c
g. a, b and c
h. We have no vehicles available

19. ____ Do you have written agreements with car dealers on loaned vehicles?
a. Yes
b. No
c. We have no loaned vehicles as indicated in the last question.

20. ____ Is credit toward graduation given for the driver education program?
a. Yes. Credit is given only for the completed unit which includes both the classroom and laboratory phase.
b. Yes. Credit is given for both the classroom and laboratory phases separately.
c. Credit is given for the classroom phase but not the laboratory phase.
d. Credit is given for the laboratory phase but not the classroom phase.
e. No. Credit is not given for any aspect of this program.

21. ____ How many credits is it possible to receive for driver education?
a. 0—No credit is given for any aspect of the program
b. ¼
c. ½
d. ¾
e. 1
f. More than 1

22. ____ Are students in your driver education program graded?
a. Yes. One grade is given for the completed unit which includes both the classroom and laboratory phases.
b. Yes. Both the classroom and laboratory phases are graded separately.

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c. The classroom phase is graded but the laboratory phase is not.
d. The laboratory phase is graded but the classroom phase is not.
e. No. Grades are not given in any aspect of this program.

23. ____ What type of grades are used in your driver education program?
a. No grades are given for any aspect of this program as noted in the last question.
b. Pass-fail grades are used where grades are given.
c. Letter grades are used where grades are given.
d. Pass-fail grades are given for the classroom phase and letter grades are given for the laboratory phase.
e. Pass-fail grades are given for the laboratory phase and letter grades are given for the classroom phase.

24. ____ Are permanent records maintained for all students having completed your driver education program?
a. Yes
b. No

CLASSROOM PHASE

25. ____ The classroom phase of driver education is:
a. Required
b. An elective
c. Not offered

26. ____ The classroom phase of driver education is taught as:
a. A separate subject
b. A unit within another subject
c. Not offered

27. ____ At what grade level(s) is classroom instruction in driver education offered during the regular school year?
a. Grade 9
b. Grade 10
c. Grade 11
d. Grade 12
e. Grades 9 and 10
f. Grades 10 and 11
g. Grades 11 and 12
h. Grades 9, 10 and 11
i. Grades 10, 11 and 12
j. Grades 9, 10, 11 and 12
k. Classroom instruction is not offered during regular school year

Please use the letters of the following responses to answer each of the next 4 questions.

Responses:
a. 1-20
b. 21-25
c. 26-30
d. 31-35
e. 36-40
f. 41-45
g. 46-50
h. 51-75
i. 76-100
j. 101-125
k. 126-150
l. 151 or more
m. The classroom phase is not offered at this time

Question:
How large is the average size class in the classroom phase when instruction is offered:

28. ____ During the regular school day?

29. ____ After school?

30. ____ On weekends?

31. ____ During the summer?

Please use the letters of the following responses to answer each of the next 4 questions.

Responses:
a. 20-30 minutes
b. 31-40 minutes
c. 41-50 minutes
d. 51-60 minutes
e. 61-75 minutes
f. 76-90 minutes
g. 91-120 minutes
h. Longer than 120 minutes
i. The classroom phase is not offered at this time

Question:
How long is the average class period in the classroom phase when instruction is offered:

32. ____ During the regular school day?

33. ____ After school?

34. ____ On weekends?

35. ____ During the summer?

Please use the letters of the following responses to answer each of the next 4 questions.

Responses:
a. 1
b. 2
c. 3
d. 4
e. 5

f. 6
g. 7
h. The classroom phase is not offered at this time

Question:
How many times per week do the students meet for instruction in the classroom phase when instruction is offered:

36. ____ During the regular school day?

37. ____ After school?

38. ____ On weekends?

39. ____ During the summer?

Please use the letters of the following responses to answer each of the next 4 questions.
Responses:
a. Less than 29
b. 30
c. 31-36
d. 37-45
e. 46-60
f. 61-90
g. 91 or more
h. The classroom phase is not offered at this time

Question:
What is the total number of hours of instruction in the classroom phase when instruction is offered:

40. ____ During the regular school day?

41. ____ After school?

42. ____ On weekends?

43. ____ During the summer?

LABORATORY PHASE

44. ____ The laboratory phase of driver education is
a. Required
b. An elective
c. Not offered

45. ____ At what grade level(s) is the laboratory phase of driver education offered during the regular school year?
a. Grade 10
b. Grade 11
c. Grade 12
d. Grades 10 and 11
e. Grades 10, 11 and 12
f. Laboratory instruction is not offered during the regular school year

46. ____ How is the laboratory phase of your driver education program offered?
a. Concurrently with classroom instruction
b. Immediately after the classroom phase has been completed
c. The laboratory phase may be taken at any time after the classroom phase has been completed
d. a and b
e. a and c
f. b and c
g. a, b and c
h. The laboratory phase is not offered

47. ____ How many students are normally assigned to a driver education vehicle during each instructional period?
a. 1
b. 2
c. 3
d. 4
e. 5
f. Laboratory instruction is not offered

Please use the letters of the following responses to answer each of the next 4 questions.

Responses:
a. Less than 20 minutes
b. 20-30 minutes
c. 31-40 minutes
d. 41-50 minutes
e. 51-60 minutes
f. 61-90 minutes
g. 91-120 minutes
h. 121-150 minutes
i. 151-180 minutes
j. Longer than 3 hours
k. The laboratory phase is not offered at this time

Question:
How long is the behind-the-wheel instructional period for an individual student during a single laboratory session when instruction is offered:

48. ____ During the regular school day?

49. ____ After school?

50. ____ On weekends?

51. ____ During the summer?

Please use the letters of the following responses to answer each of the next 4 questions.
Responses:
a. 1

b. 2
c. 3
d. 4
e. 5
f. 6
g. 7
h. More than 7
i. The laboratory phase is not offered at this time

Question:
How many times a week does an individual student attend laboratory sessions when instruction is offered:

52. ____ During the regular school day?

53. ____ After school?

54. ____ On weekends?

55. ____ During the summer?

Please use the letters of the follcwing responses to answer each of the next 4 questions.
Responses:
a. Less than 5
b. 5-6
c. 7-8
d. 9-10
e. 11-12
f. 13-14
g. 15-16
h. 17-18
i. More than 18
j. The laboratory phase is not offered at this time

Question:
How many periods of instruction per student constitute a complete unit in the laboratory phase when instruction is offered:

56. ____ During the regular school day?

57. ____ After school?

58. ____ On weekends?

59. ____ During the summer?

60. ____ How much actual behind-the-wheel driving experience does each student receive in the laboratory phase?
a. Less than 3 hours
b. 3 hours
c. 4 hours
d. 5 hours
e. 6 hours
f. 7 hours
g. 8-9 hours
h. 10-11 hours
i. 12 hours or more
j. The laboratory phase is not offered

61. ____ Are special units concerning emergency situations taught during the laboratory phase?
a. Yes
b. No
c. The laboratory phase is not offered

62. ____ Are driving simulators used in your instruction?
a. Yes. All students receive instruction on simulators.
b. Yes; however, they are not available to all students.
c. No

63. ____ At the present time, what is your district's feeling toward the incorporation of simulation into your driver education program?
a. Not interested
b. Somewhat interested
c. Strongly interested
d. We already use simulators as indicated in previous question
e. b and d
f. c and d

64. ____ Do you utilize an off-street driving range in your instruction?
a. Yes. All students receive instruction on an off-street driving range.
b. Yes; however, this type of instruction is not available to all students.
c. No

65. ____ At the present time, what is your district's feeling toward the incorporation of an off-street driving range into your driver education program?
a. Not interested
b. Somewhat interested
c. Strongly interested
d. We already use an off-season driving range as indicated in the previous question
e. b and d
f. c and d

STAFF AND ADMINISTRATION

Please use the letters of the following responses to answer each of the next 5 questions.

Responses:
a. 0
b. 1
c. 2
d. 3
e. 4

f. 5
g. 6-10
h. 11-15
i. 16-20
j. 21-25
k. 26-30
l. 31-40
m. 41-50
n. 51-60
o. 61-70
p. 71-80
q. 81 and above
r. Not applicable. This district did not have a driver ed. program at this time

66. ____ How many full-time driver education instructors and/or supervisors (80% time or more) were employed in your district during the last regular school year? (September 1968 - June 1969)

67. ____ How many additional part-time driver education instructors and/or supervisors (less than 80% time) were employed in your district during the last regular school year? (September 1968 - June 1969)

68. ____ How many instructors and/or supervisors were employed (full- or part-time) in your district's driver education program last summer? (1969)

69. ____ How many full-time driver education instructors and/or supervisors (80% time or more) are employed in your district for the current school year?

70. ____ How many part-time driver education instructors and/or supervisors (less than 80% time) are employed in your district for the current school year?

71. ____ Of all the driver education instructors employed in your district at any time last year (September 1968 - August 1969), how many were *not* fully certificated? (Based upon present certification of 12 quarter hours of Safety and Driver Education courses)
a. 0
b. 1
c. 2
d. 3
e. 4
f. 5-7
g. 8-10
h. 11-13
i. 14-16
j. 17-19
k. 20-22
l. 23-25
m. 26-35
n. 36-45
o. 46-55
p. 56-65
q. 66 and above

Please use the letters of the following responses to answer each of the 8 questions included in the next 2 sets of questions.
Responses:
a. On the same basic salary schedule as all other teachers
b. On the basis of a percentage of their regular yearly salary
c. On the basis of the number of students taught
d. By the day
e. By the hour
f. On the basis of their experience in driver education
g. Other methods
h. Combinations of the above
i. We do not offer this phase of the driver education program at this time

Question:
How are the teachers who instruct the classroom phase of your driver education program paid when the instruction occurs:

72. ____ During the regular school day?

73. ____ After school?

74. ____ On weekends?

75. ____ During the summer?

Question:
How are the teachers who instruct the laboratory phase of your driver education paid when the instruction occurs:

76. ____ During the regular school day?

77. ____ After school?

78. ____ On weekends?

79. ____ During the summer?

80. ____ Are special orientation programs for driver education instructors offered at the beginning of each program?
a. Yes
b. No

81. ____ How often are in-service training programs for driver education instructors conducted?
a. Not at all
b. Annually
c. Semi-annually
d. Quarterly
e. Monthly
f. Weekly

THANK YOU VERY MUCH FOR YOUR COOPERATION

January 1970

State of Minnesota

Department of Education

Traffic Safety Education Survey

INDIVIDUAL INSTRUCTOR QUESTIONNAIRE

This questionnaire should be completed by each individual driver education instructor. It has been designed in such a manner that the data may be transferred directly from the questionnaire to computer data cards. As such, it is essential that *all* of the questions be answered and that each question be answered only once. Be sure to consider all possible responses before answering.

Please write the letter of the one best response for each question in the blank provided.

Name _____
(Last) (First) (Initial)

File Folder Number_____

Minnesota Teacher Certificate Number_____

Driver License Number _____

School District where you are presently employed:

_____ _____
(Number) (Name of School)

School District(s) where you were employed last summer or during the 1968-69 school year if different from where you are currently employed. (If same, write "same".)

_____
(Last Summer)

_____
(1968-69 School Year)

1. ____ How much education have you completed as of January 1970?
   a. Less than a bachelor's degree
   b. Bachelor's degree
   c. Bachelor's degree plus some graduate work
   d. Master's degree
   e. Master's degree plus some work toward a doctorate
   f. Doctorate
   g. More than a doctorate

   Please use the letters of the following responses to answer the next 2 questions.
   Responses:
   a. Administration
   b. Agriculture
   c. Business Education
   d. Elementary Education
   e. English
   f. Foreign Language
   g. Guidance and Counseling
   h. History
   i. Industrial Arts
   j. Mathematics
   k. Physical Education
   l. Sciences
   m. Social Studies
   n. Other

2. ____ What is your major field?

3. ____ What is your minor field?

4. ____ Are you certificated to instruct driver education in Minnesota?
   a. Yes
   b. No

5. ____ At which school have you received the major part of the college credit you have in driver education courses?
   a. Bemidji
   b. Concordia
   c. Hamline
   d. Mankato
   e. Moorhead
   f. St. Cloud
   g. University of Minnesota
   h. University of Minnesota, Duluth
   i. Winona
   j. Other schools in Minnesota
   k. Schools outside Minnesota
   l. I have received equal numbers of credits from 2 or more of the above schools
   m. I have never taken any college-level courses in driver education

6. ____ What was the last year in which you received college credit for any driver education course?
   a. 1969
   b. 1968
   c. 1967
   d. 1966
   e. 1965
   f. 1964
   g. 1963
   h. 1962

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i. 1961
j. 1960
k. 1956-1959
l. 1952-1955
m. 1948-1951
n. 1944-1947
o. Before 1944
p. I have never taken any college courses in driver education.

7. ____ How many quarter credit hours have you earned in driver education or related subjects? (⅔ of a semester credit = 1 quarter credit)
a. 0
b. 1-3
c. 4-6
d. 7-9
e. 10-12
f. 13-15
g. 16-18
h. 19-21
i. 22-24
j. 25 or more

8. ____ How well would you say the courses you have taken in driver education have prepared you to teach the subject?
a. Very well
b. Satisfactorily
c. Poorly
d. I have not taken any driver education courses

9. ____ How many years have you been a teacher in any subject?
a. Less than 1
b. 1
c. 2
d. 3
e. 4-6
f. 7-9
g. 10-12
h. 13-15
i. 16-18
j. 19-21
k. 22-24
l. 25 or more

10. ____ How many years have you been a driver education instructor?
a. Less than 1
b. 1
c. 2
d. 3
e. 4-6
f. 7-9
g. 10-12
h. 13-15
i. 16-18
j. 19-21
k. 22-24
l. 25 or more

11. ____ What was your involvement with the driver education program at your school during the last regular school year?
(September 1968 - June 1969)
a. Full-time (80% time or more)
b. Part-time (Less than 80% time)
c. I did not teach driver education last year

12. ____ What is your involvement with the driver education program at your school this year?
a. Full-time (80% time or more)
b. Part-time (Less than 80% time)
c. I am not teaching driver education this year

13. ____ What is the normal daily teaching load for your school district?
a. Less than 4 hours
b. 4 hours
c. 5 hours
d. 6 hours
e. 7 hours
f. 8 hours
g. More than 8 hours

14. ____ How much time during the normal school day do you spend teaching driver education?
a. Less than 1 hour
b. 1 hour - 1 hour, 59 minutes
c. 2 hours - 2 hours, 59 minutes
d. 3 hours - 3 hours, 59 minutes
e. 4 hours - 4 hours, 59 minutes
f. 5 hours - 5 hours, 59 minutes
g. 6 hours - 6 hours, 59 minutes
h. 7 hours - 7 hours, 59 minutes
i. 8 hours or more
j. I don't teach driver education during the normal school day.

15. ____ How many days per week did you teach driver education last summer?
a. 0 — I did not teach driver education last summer
b. 1
c. 2
d. 3
e. 4
f. 5
g. 6
h. 7

16. ____ How many hours per week did you teach driver education last summer?
a. 0 — I did not teach driver education last summer
b. 1 - 10
c. 11 - 20
d. 21 - 30

e. 31 - 40
f. 41 - 50
g. 51 - 60
h. 61 - 70
i. 71 or more

17. ____ Did you teach driver education after school during the September 1968 - June 1969 school year?
a. Yes
b. No

18. ____ Are you teaching driver education after school during the current school year?
a. Yes
b. No

19. ____ Did you teach driver education on Saturdays during the September 1968 - June 1969 school year?
a. Yes
b. No

20. ____ Are you teaching driver education on Saturdays during the current year?
a. Yes
b. No

We are interested in determining the general responsibilities of driver education instructors. Please indicate the percentage of time you are devoting during the current school year to each of the following activities by placing the appropriate letter in each of the blanks provided. The total should add to 100%. (Mark *a* for each activity that does not apply to you.)
Responses:
a. 0% - Does not apply to me
b. 1% - 10%
c. 11% - 20%
d. 21% - 30%
e. 31% - 40%
f. 41% - 50%
g. 51% - 60%
h. 61% - 70%
i. 71% - 80%
j. 81% - 90%
k. 91% - 100%

21. ____ Administration
22. ____ Agriculture
23. ____ Business Education
24. ____ Driver Education
25. ____ Elementary Education
26. ____ English
27. ____ Foreign Language
28. ____ Guidance and Counseling
29. ____ History
30. ____ Industrial Arts
31. ____ Junior High School
32. ____ Mathematics
33. ____ Physical Education
34. ____ Sciences
35. ____ Social Sciences
36. ____ Other

We are also interested in the involvement of driver education instructors in extra-curricular activities. Please indicate the percentage of time you are devoting during the current school year to *each* of the following extra-curricular activities by placing the appropriate *letter* in each of the blanks. The total should add to 100%. (Mark *a* for each activity that does not apply to you.)
Responses:
a. 0% - Does not apply to me
b. 1% - 10%
c. 11% - 20%
d. 21% - 30%
e. 31% - 40%
f. 41% - 50%
g. 51% - 60%
h. 61% - 70%
i. 71% - 80%
j. 81% - 90%
k. 91% - 100%

37. ____ Coaching
38. ____ Speech and/or Debate
39. ____ Dramatics
40. ____ Clubs
41. ____ Journalism
42. ____ Others

The following is a list of possible courses in the area of Traffic and Safety Education. Please indicate your interest in taking individual courses by placing the *letter* corresponding to your degree of interest in the blank provided. Be sure to indicate a choice for *each* blank.
Responses:
a. Very interested
b. Somewhat interested
c. Not interested

43. ____ Driving Behavior and Personality
44. ____ Highway Engineering and Traffic Controls
45. ____ Motor Vehicle Administration

46. ____ Basic Auto Mechanics and Auto Systems

47. ____ Principles of Accident Prevention

48. ____ Alcohol and the Driver

49. ____ Motorcycles

50. ____ Transportation Systems

51. ____ Research Techniques as Related to Traffic Safety

52. ____ Motor Vehicle Law and Enforcement

53. ____ Administration and Supervision of Safety Education

54. ____ Innovative Methods in Driver Education

55. ____ Basic Simulation and Range Instruction

56. ____ Problems in Driver Education

57. ____ Would you actually take any of the above courses if they were made available to you?
    a. Yes
    b. No

58. ____ Do you favor higher certification standards for driver education instructors and supervisors?
    a. Yes
    b. No

THANK YOU VERY MUCH FOR YOUR COOPERATION.

VT 019 487

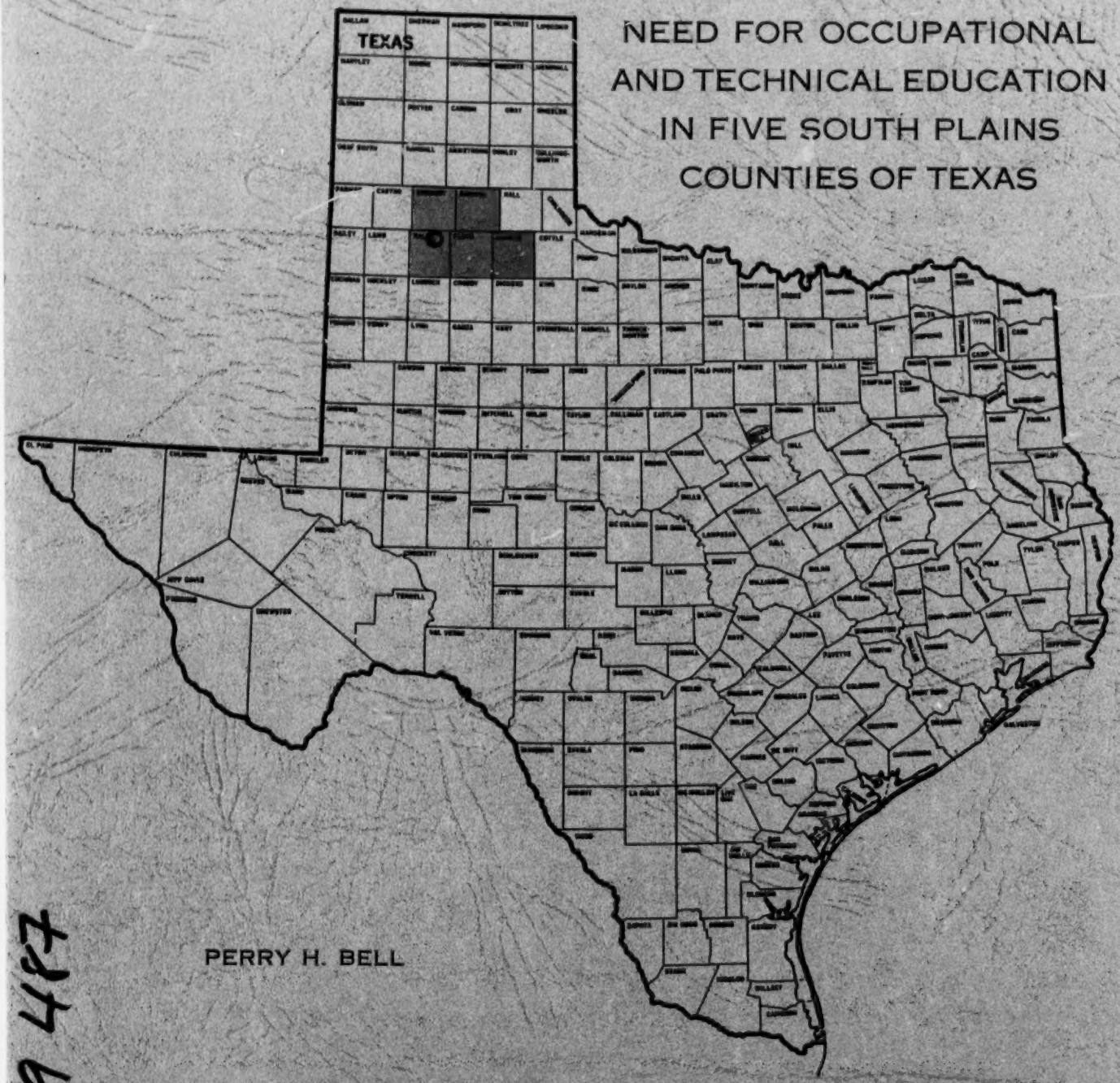
VT 019 487
A STUDY TO DETERMINE THE NEED FOR OCCUPATIONAL AND TECHNICAL EDUCATION IN FIVE SOUTH PLAINS COUNTIES OF TEXAS.

PLAINVIEW PUBLIC SCHOOLS, TEX.
TEXAS EDUCATION AGENCY, AUSTIN.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - OCT72 148P.

DESCRIPTORS - OCCUPATIONAL SURVEYS; *EMPLOYMENT PROJECTIONS; EMPLOYMENT TRENDS; EMPLOYMENT PROBLEMS; *EMPLOYMENT OPPORTUNITIES; *AREA STUDIES; *EMPLOYMENT POTENTIAL; *VOCATIONAL EDUCATION; PROGRAM DEVELOPMENT
IDENTIFIERS - *TEXAS

ABSTRACT - TO DETERMINE THE NEED FOR OCCUPATIONAL AND TECHNICAL EDUCATION AT THE POST-SECONDARY LEVEL IN A FIVE-COUNTY AREA OF THE PLAINS OF NORTHWEST TEXAS, QUESTIONNAIRES WERE DISTRIBUTED TO 2,400 EMPLOYERS, THE 15,000 STUDENTS IN GRADES 9 THROUGH 12, MEMBERS OF THE CLASS OF 1969, AND PARENTS OF SEVENTH GRADERS CURRENTLY ENROLLED IN SCHOOL IN BRISCOE, FLOYD, HALE, MOTLEY, AND SWISH COUNTIES. FINDINGS INCLUDED: (1) A SHORTAGE OF WELL TRAINED AVAILABLE REPLACEMENT WORKERS EXISTS IN TWO-THIRDS OF THE CURRENT OCCUPATIONAL POSITIONS IN THE AREA, (2) THE NUMBER OF EMPLOYEES IN PRESENT LEVELS WILL INCREASE BY 12.2 PERCENT OVER THE NEXT FIVE YEARS WITH THE GREATEST EXPANSION BEING AMONG SEMI-PROFESSIONAL AND TECHNICAL WORKERS, (3) THE NUMBER OF EMPLOYERS WILL LIKEWISE INCREASE BY 15 PERCENT OVER THE NEXT FIVE YEARS WITH THE GREATEST INCREASE OCCURRING IN HEALTH, TECHNICAL AND INDUSTRIAL OCCUPATIONS, (4) BASED ON THE TOTAL LABOR FORCE AND CONSIDERING INCREASE PROJECTIONS, THERE ARE ANNUALLY 400 OCCUPATIONAL OPPORTUNITIES REQUIRING POST-SECONDARY TRAINING WITHIN THE AREA, AND (5) SPECIFIC TRAINING REQUIRING MORE TIME AND A DIFFERENT ENVIRONMENTAL SETTING ARE NEEDED FOR SOME JOBS. (SN)

A STUDY TO DETERMINE THE NEED FOR OCCUPATIONAL AND TECHNICAL EDUCATION IN FIVE SOUTH PLAINS COUNTIES OF TEXAS



PERRY H. BELL

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A STUDY TO DETERMINE THE NEED FOR OCCUPATIONAL AND TECHNICAL EDUCATION IN FIVE SOUTH PLAINS COUNTIES OF TEXAS

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October 1972

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The survey instruments were printed by the C.V.A.E. - Office Duplication Class, Coronado Junior High School, Plainview, Texas under the direction of Mrs. Charline Kamp.

The Superintendents of the school districts granted approval to use the resources of their schools. Principals, counselors, and teachers distributed and administered the survey instruments within their respective schools and furnished names and addresses of former students.

The respondents to the survey instruments included more than 5,400 individuals -- employers, high school students, former students, and parents -- who supplied the raw data.

Individuals in each of the cities and towns provided valuable assistance in identifying employers for survey and follow-up purposes.

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CHAPTER I

INTRODUCTION

The youth of today must enter the world of work to compete in an increasingly complex economy Rapidly changing technologies create new occupational opportunities while many existing jobs disappear. Within recent years there has been a concentration on the need for the educational system of America to provide training to meet these challenges

The Vocational Education Act of 1963 and the Vocational Amendments of 1968 have focused attention to the critical need for technically skilled manpower in practically every field of commerce, industry, and business. This legislation provides that occupational education planning be based on need and opportunity for trained manpower The initial effort in planning is to compile information to determine manpower requirements, while the potential labor supply is identified as a basis for training program planning and implementation.

Purposes of the Study

This study was conducted to determine the need for occupational and technical education at the post-secondary level in a five-county area of the plains of Northwest Texas Data and information were collected and compiled to support this determination of the need or lack of need for programs at the post-secondary level to provide trained manpower to meet the requirements of business and industry. The objectives of the study were to

1 Identify labor market needs (in terms of current and anticipated employment

opportunities) in the five (5) county area.

2. Determine the educational interests, aspirations, and expectations of out-of-school youth, in-school youth, and their parents as pertains to occupational and technical education.

3. Determine whether or not these needs are being met for all types of students.

4. Determine the availability and suitability of facilities for occupational and technical education in the five (5) county area.

5. Analyze the results of the project in terms of post secondary planning.

6. Formulate specific recommendations for future action at the state, regional, and local level.

The Populations Surveyed

The study was conducted in the following five counties: Briscoe, Floyd, Hale, Motley, and Swisher. Four populations within this area were surveyed -- employers, high school students, out-of-school youth, and parents.

Employers were defined as all types of businesses, industries, professional offices, institutions, and governmental agencies. Approximately 2,400 potential employers were identified from telephone directories for each of the cities, towns, and communities within the five-county area.

There are 15 independent school districts in the five-county area enrolling approximately 15,000 students. Those enrolled in grades 9 - 12 in each district were included in the survey of the high school student population.

Out-of-school youth were defined as those who were approximately 21 years of age. Members of the high school class of 1969 met this criteria and were included in this population. Students of this group who had withdrawn for transfer purposes

were not included in the study.

Seventh grade students will be high school graduates in 1977, the year to which employers were asked to project their manpower needs. Parents of these students were defined as the parent population to be surveyed.

Need for Study

The increasing complexity of the economy in America, which results from advancing technologies in practically every field of endeavor, is affecting the educational system. The need to make education more meaningful to all who engage in this transitional experience is gaining wider acceptance under the impetus of greater public awareness. This challenge is recognized by the Texas Senate Committee on Vocational-Technical Education in their report made in 1969 of hearings held within the state when they received testimony from representatives of labor, industry, and the educational system: (10:28)

> In a sense, all education is occupationally oriented. Thus, any educational skills, however acquired, can be significant in a students' vocational success or failure. None the less, the modern economy demands employees who possess not only a good general education, but applied skills and knowledge as well. This is true not only of those students who are non-college bound, but increasingly of those who are securing college degrees.

An assessment of the changing educational requirements of the nations labor force pointed out that in 1930 an elementary education or less was adequate for 58 per cent of the employed population and a high school education sufficed for an additional 32 per cent. By contrast, the suggestion is made that during the 1970's 50 per cent of the labor force will be in positions requiring post-high school education equivalent to graduation from junior college, with an additional 18 per cent in positions requiring

at least the baccalaureate degree. (3 :2)

Historical Perspective of Vocational Education Legislation

National concern for educational relevance to occupational proficiency was evidenced in 1917 with the passage of the Smith-Hughes Act. This act established a local-state-federal partnership to prepare persons for the labor market and upgrade the work force. The initial annual authorization under Smith-Hughes was $7 million. Various subsequent enactments added $40 million to the basic yearly sum. The George-Reed Act in 1929 aided the expansion of agriculture and home economics programs. In 1934, the George-Ellzey Act provided additional support for trades and industry training. The George-Dean Act in 1936 provided continuing support for existing programs and for the first time included distributive occupations.

Following World War II, when special programs helped train seven million war production workers, the George-Barden Act in 1946 doubled federal support for vocational education in the same four fields -- agriculture, home economics, trades and industry, and distributive occupations. The advent of the space age resulted in the passage of the 1958 National Defense Education Act, which, under Title VIII, provided for the training of highly skilled technicians in defense related fields. Concern for unemployment and underemployment in economically depressed areas led to the Area Redevelopment Act of 1961 and the Manpower Development and Training Act of 1962, which provide training programs for the unemployed and persons whose skills need upgrading to meet shifting employment needs. (11:59-62)

The year 1963 was in many respects the most exciting and important in the history of vocational education. A year long study by a special Presidential Panel of

Consultants resulted in the passage of the Vocational Education Act of 1963. The purpose of this act was to set a new pattern of federal support for vocational education and to make training for "gainful employment" a major goal for all programs it supported. It was intended to modernize and provide new directions for the entire vocational education system, put resources within reach of all persons in all communities, and offer job entry training or career advancement training in virtually every occupation below the four-year or professional level. (13:1)

The Vocational Amendments of 1968, (Public Law 90-576) emphasized priorities for post-secondary programs, work study programs for needy students, adult programs, and programs and services for persons with special needs. Congress signiticantly increased appropriations to help the schools assume responsibility for orienting the young to the world of work and producing workers who can compete in a changing occupational structure. (13:3-4)

Philosophy of Vocational Education

The function of public education in preparing our people for gainful employment is now recognized to be as important as providing them with a general education designed to prepare them for life in the broad sense. This "new" philosophy of education requires acceptance, since society can ill afford to release a youth from his school unless he is adequately prepared for an advanced program of education or for full-time employment, according to Lutz. (4)

The new philosophy of vocational education was expressed by Arthur Lee Hardwick, Associate Commissioner, United States Office of Education, in September 1970, in his address before the Leadership Development Seminar for State Directors of Vocational

Education at the National Center for Vocational Education, Ohio State University, when he described a model program in the District of Columbia. (1)

> ...it involves broad orientation to the world of work for all elementary school pupils, followed by in depth exploration of a variety of occupational clusters at the junior high level, continuing on into more specific preparation for employment in selected job families at the senior high school level, and culminating in placement, either in a job or in further education, for every student who leaves the school system by graduation or otherwise

Historically, the concept of career education has been a basic objective of the United States Office of Education.

Vocational education provides training for the non-college bound school youth and a solution for the school drop-out. It also provides an opportunity to bridge the gap between education and the world of work for the unprepared post-high school youth and for adults who need retraining for new or different employment opportunities or upgrading their skills.

Community colleges and post-secondary vocational education institutions are particularly suited for career education programs, according to Commissioner Hardwick. They are the most accessible institutions of higher education geographically, financially, and academically They have already dealt with the economics and geographic constraints of higher education with their low tuition cost and high percentage of local support.

The 1968 legislation requires states to meet certain requirements in providing federal funds for local vocational education programs. Due consideration must be given to the relative needs of each population group for vocational education and to the current and projected manpower needs and job opportunities. These considerations

are incorporated in the Texas State Plan for Vocational Education. (9) The present study is designed to meet this requirement.

Related Studies

Several studies, with findings and conclusions relevant to the present effort, are presented.

Two community colleges, Black Hawk College, Moline, Illinois and multi-campus Eastern Iowa Community College across the Mississippi River, conducted a study to determine post-high school education needs in the area served by the two colleges. Another purpose was to provide a basis for cooperation across the state boundary by the two colleges to more effectively provide various types of post-high school programs. The survey, conducted through citizens committees, studied (1) community characteristics, (2) plans, interests, aspirations and abilities of high school seniors, (3) aspirations of parents of fifth grade children for education for themselves and their children, (4) patterns of occupational and educational pursuits, residential distribution, and present educational interests of previous high school graduates, and (5) the educational needs of local industry, business, and governmental enterprises. It was found that there was a relatively high level of moral support and desire for post-high school education. Bases were found for expanding educational and occupational guidance. There was a need for occupational entry and job upgrading training programs. There appeared to be a lack of understanding that the role of the community or public junior college is different from the typical four-year college. (7)

Lutz (4) conducted a study of the need for expanding vocational education opportunities in a six-county area of North Central Montana during 1966-67.

Conclusions, suggestions, and recommendations were made to guide the second year phase of the planning project. He surveyed several populations: employers, out-of-school youth, high school seniors and sophomores, and school administrators and board members. It was found that secondary programs were strongly college oriented, with over half the students indicating they were college bound, and in excess of 40 per cent indicating interest in various professional fields. Statistical evidence is cited which indicates only 20 per cent of high school graduates complete four year degree programs and that this per cent can satisfy professional level opportunities. He concludes that high school programs have not adequately provided for students with vocational interests, and recommends that guidance and school programs be expanded to meet these needs, without a reduction of academic program emphasis for those so inclined. Recommendations were also made for post-secondary vocational education programs following the implementation of appropriate secondary programs.

Mondart and others (5) surveyed the educational and occupational aspirations of Louisiana high school students and related these to their background of experiences. More than 13,000 boys and girls were interviewed in a group situation technique. The findings of the study suggest that high school students develop strong occupational interests early, most having made tentative choices before the 11th grade, though available occupational information has little influence on choices. The researchers found that student educational and occupational aspirations and expectations are influenced most by the home and friends. Many students develop unrealistic aspirations for prestigious careers, and recommendations were made that consideration should be given for work better suited to their abilities. To do this, schools should provide early

organized and realistic information regarding career opportunities and should provide more training options through curricular design flexibility. Less than 20 per cent of the students were experiencing occupational training in high school, yet almost three of four expected to enter the world of work as technical or skilled workers.

Further conclusions and recommendations indicated that the discovery of new information will broaden the knowledge of the occupational development process and schools should give primary concern to the development of occupational objectives, including students who aspire to college and professional careers. A key to improved education may be to bridge the gap between the high school and college for students wanting continuous vocational training. The failure of students to mature occupationally in high school and the need for junior and senior colleges to provide varied vocational curriculums at the two-year level, suggest that research be undertaken to investigate the needs and values of high school students who plan to continue their education after high school as a vocational student. There is clear evidence of the need for counseling and guidance services comprehensive enough to cope more effectively with the varying needs of students.

A study of three ethnic groups at the ninth grade level regarding their educational and occupational aspiration levels was conducted in Texas by Irwin. (2) The three groups were Anglo, the majority group, Mexican-American, and Negro. Several findings have implications for education and the present study. It was found that for all three groups the aspiration levels were considerably higher than expectation levels. The minority groups have lower aspirations than the dominant ethnic group. The two minority groups have lower expectation levels for occupational status

than the majority group, though most Mexican-Americans expect to move to a higher occupation category than that occupied by their parents. The Negro respondents had a higher aspiration level related to the breadwinners' status than the other groups.

Methods and Procedures

The establishment of occupational and technical education programs should be preceded by surveys to determine immediate and projected manpower requirements. Such surveys are required by the Vocational Amendments of 1968 and the Texas State Plan for Vocational Education. This study was designed to accomplish its purposes by surveying several populations -- employers, in-school youth, out-of-school youth, and parents. Survey forms were developed for each of the four populations by synthesizing the objectives and purposes of the study and models in the literature.

Conferences were held with the project supervisor and consultants to receive suggestions for improvement of the study design and forms to be used in the study. Conferences were also held in Austin with the Educational Program Director, Division of Occupational Research and Development, Department of Occupational Education and Technology, Texas Education Agency to obtain approval of the design and forms. Suggestions were incorporated in revisions of the forms, which were then printed by the CVAE - Office Duplication classes at Coronado Junior High School, Plainview, Texas.

Superintendents of each of the fifteen school districts were contacted first by mail, then personally, to discuss the project and its purposes, and to solicit their cooperation. Each granted approval to survey their high school students, to use their seventh grade students for distribution of the parent survey, and to furnish names and last known

addresses of members of the class of 1969.

Survey forms for approximately 4,000 high school students were delivered to each of the 15 participating school districts to be administered by school personnel at their convenience according to school calendars. This was accomplished and the surveys were returned within three weeks.

Employers were identified from the telephone directories for each city and community within the five-county area. Manpower and Training Needs Survey forms were mailed to approximately 2,400 potential employers. Several factors - name duplication, business mortality, etc. - reduced this number to approximately 1,900. Personal and telephone contacts were made by the project staff with selected employers and 800 postal reminders were mailed to non-responding employers to increase the rate of return. This was accomplished within approximately six weeks.

Parent survey forms were distributed to the various junior high schools to be delivered by approximately 1,100 seventh graders to their parents, or guardian, one of whom was to complete the survey form. This was accomplished and the forms returned within approximately three weeks.

Out-of-school youth were identified as members of the high school class of 1969 in the 15 school districts. Names and current addresses were obtained for 819 out-of-school youth and follow-up survey forms were mailed to each. Of these, 52 were undeliverable, due to incorrect addresses, which reduced the number to 767. Follow-up was conducted by mailing a postal card reminder.

Data and information obtained from the several groups were compiled to obtain frequencies and percentages of response to the elements of each survey form. The

compilation for high school students was accomplished by computer methods, by grade level and sex for each school district and by counties. The details for each school district are not presented in this report, but the information has been provided to each individual school.

CHAPTER II

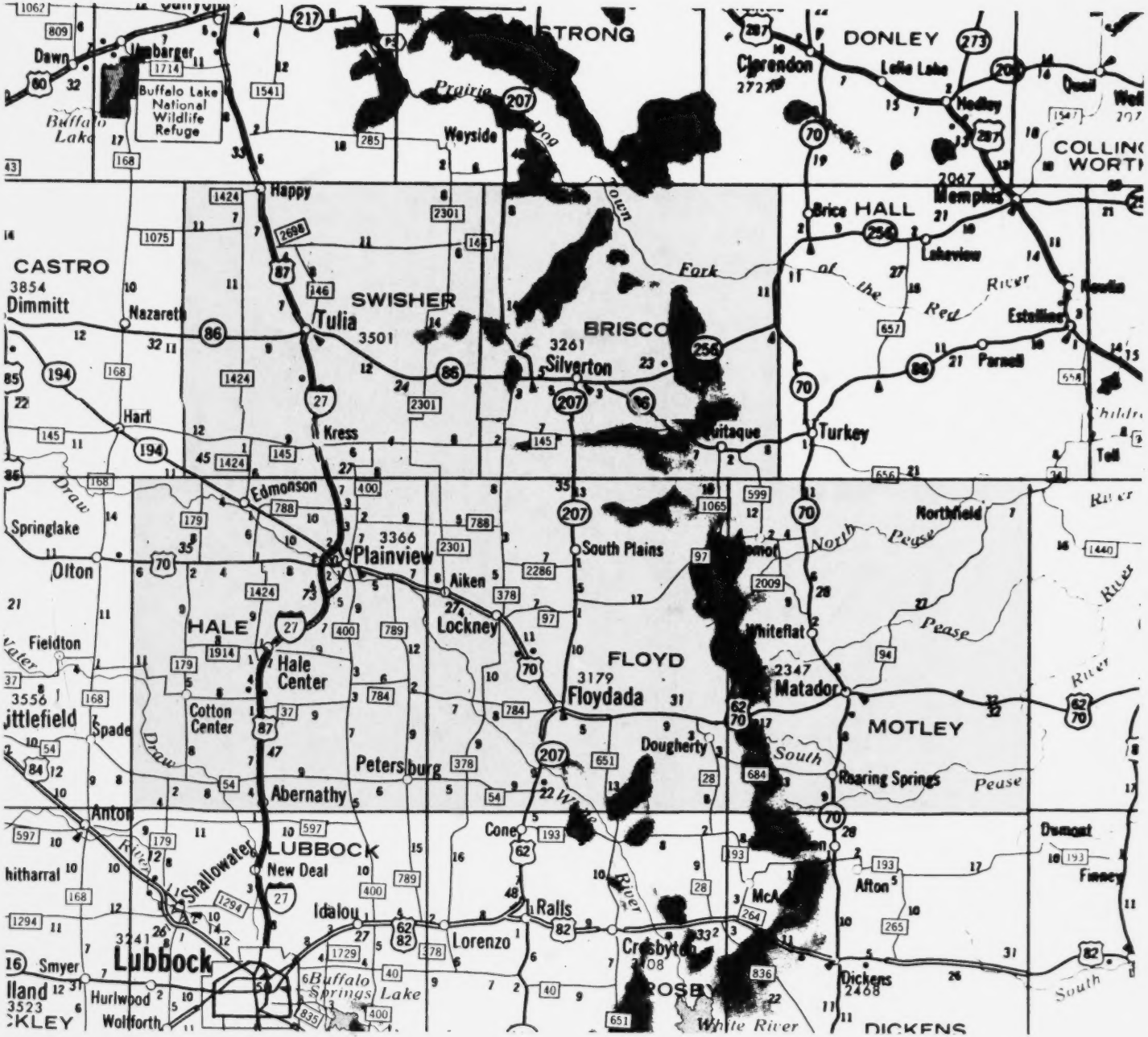
DESCRIPTION OF THE AREA

Geography

The five counties included in the study, Briscoe, Floyd, Hale, Motley and Swisher, are located in the northwestern part of Texas. The principal city of the region , Plainview, is situated 47 miles north of Lubbock and 83 miles south of Amarillo, the two largest cities in this section of the state. The area of the counties varies from 887 to 1,011 square miles and the total area of the region is 4,758 square miles.

These five counties are situated in two distinct geographic regions of the state - the High Plains and the North Central or Rolling Plains. The High Plains are sometimes referred to as the Staked Plains, the Spanish equivalent of which is Llano Estacado. Some historians attribute this name to the fact that the Coronado expedition in 1540-1541 while traveling across the trackless sea of grass staked its route in order to be guided on its return trip from Quivira.

The eastern part of the five-county area, some 2/3 of Briscoe county, the northeastern corner of Floyd county, and practically all of Motley county lie in the Rolling Plains geographic region, while the balance of the area lies on the High Plains to the west. The boundary between the two geographic divisions of the area consists of the Cap Rock Escarpment, an eastward facing mountain wall, rising in places from 100 to 500 feet above the Rolling Plains to meet the flat High Plains. The altitude of the region varies from 1,900 feet above sea level in Motley county


DONLEY
Clarendon
Lelia Lake
Hedley
COLLINGSWORTH
Memphis
Buffalo Lake National Wildlife Refuge
Dawn
Umbarger
Weyside
Prairie Dog Town Fork of the Red River
Happy
Brice
HALL
Lakeview
Estelline
CASTRO
3854
Dimmitt
Nazareth
SWISHER
Tulia
3501
BRISCO
3261
Silverton
Parnell
Hart
Kress
Quitaque
Turkey
Edmonson
Springlake
Plainview
3366
South Plains
Northfield
North Pease River
Olton
Aiken
Lockney
HALE
Fieldton
Hale Center
Cotton Center
Spade
Petersburg
FLOYD
3179
Floydada
Whiteflat
2347
Matador
MOTLEY
Dougherty
Roaring Springs
South Pease River
Abernathy
Anton
Cone
Shallowater
LUBBOCK
New Deal
Idalou
Ralls
Crosbyton
Lorenzo
Afton
Dumont
Finney
Smyer
Lubbock
3241
Buffalo Springs Lake
Hurlwood
Wolfforth
ROSBY
Dickens
2468
White River
DICKENS
South

2153

to 3,000 feet at the Cap Rock, where the High Plains commence a gradual increase up to 3,600 feet in the northwestern parts of Hale and Swisher counties.

Several rivers flow through the region or have their headwaters there. Prairie Dog Town Fork, the mainstream of the Red River, as it flows easterly out of Palo Duro Canyon, crosses the northeast portion of Briscoe county. The North, Middle, and South Forks of the Pease River originate at the foot of the Cap Rock in Motley county. Running Water Draw traverses Hale county from the northwest, flowing through Plainview, across the southwestern portion of Floyd county and into the White River, which exits the region in the south central part of Floyd county. This is the primary branch of the Salt Fork of the Brazos River. Characteristic of the High Plains is the existence of several thousand playa, or "wet weather" lakes. These lakes are agriculturally productive in dry seasons.

The climate of the region is semi-arid, with an average annual rainfall of 19.73 inches in the five counties. The average decreases slightly from east to west. This deficiency is offset by the Ogallala water formation, which underlies the High Plains region. Irrigation from this aquifer produces most of the total crop value of the region. Sprinkler irrigation is practiced in the Rolling Plains portion of the region.

Population

The Plains region was the home of the Comanche Indians, war-like nomads who were among the most capable horsemen in the history of man and a barrier to the westward expansion of civilization for more than a generation. The Comanches were finally subdued by the United States Fourth Cavalry, led by General Ranald S. Mackenzie, in 1874 at the Battle of Palo Duro Canyon. The battle took place near

the junction of Tule and Palo Duro Canyons after their horses had been stampeded in a surprise night attack. This marked the end of Indian hostilities in Texas except for minor incidents. The site of the conclusion to this important battle is located within the region included in the present study.

Following the removal of the Indians, many West Texas counties, including the five which comprise the region of this study, were created from Bexar and Young Districts in 1876. The cattle kingdom enjoyed a brief period of supremacy, to be replaced by farming in the 1890's and early 1900's. The five counties were organized during the years 1888-1892.

The population of the five counties in 1890 was 1,489, and steadily increased each year until a peak was reached in the early 1930's. The 1930 census count was 52,343. The drouth and depression contributed to a decline in population to 45,050 in 1940. During the next 20 years the population increased in Floyd, Hale, and Swisher counties, almost doubling in Hale county, due in part to the expansion of irrigation. The population in the five counties totaled 66,621 in 1960. With crop diversification and the increased use of mechanized practices resulting in consolidation of farms, the need for manual labor decreased and the population in the five-county area dropped to 60,526 in 1970. Briscoe and Motley counties have steadily decreased in population from 1930, when there were 5,590 and 6,812 respectively, to 1970, with populations of 2,794 and 2,178.

The most populous county of the five is Hale county with 34,137 or 56.4 per cent of the total population in the area of the study. Following in order are: Floyd (11,044 or 18.25 per cent), Swisher (10,373 or 17.14 per cent), Briscoe

(2,794 or 4.62 per cent), and Motley (2,178 or 3.6 per cent). Thus the population concentrated in the western portion of the region.

The largest city in the region is Plainview, county seat of Hale county, with a population (1970) of 19,096. Next in size are Tulia, county seat of Swisher county (pop. 5,294) and Floydada, county seat of Floyd county (pop. 4,109). Matador, county seat of Motley county has a population of 1,091, while Silverton, county seat of Briscoe county,has a population of 1,026. Other towns by counties are. Briscoe county, Quitaque (pop. 601); Floyd county, Lockney (2,094); Hale county, Abernathy (2,625), Cotton Center (260), Hale Center (1,964), and Petersburg (1,300); Motley county, Flomot (181), and Roaring Springs (308); and Swisher county, Happy (672) and Kress (578). In each of these cities and towns an independent school district is located. While the population of the region has declined from 1960, the four larger cities have none the less exhibited a sustained growth pattern; the population of the four cities with more than 2,500 totals 31,124 or 51.42 per cent of the population of the region.

Statewide urbanization is revealed by the fact that, from a 45.4 per cent urban population in 1940, Texas has grown to 62.7 per cent in 1950, to 75.0 per cent in 1960 and 79.7 per cent urban in 1970. Conversely, the rural population in Texas has decreased by one and one-quarter million from 1940 to 1970, declining from 54.6 per cent of the total population to 20.3 per cent in the last census. (8 :146) These trends are evident in the area of the state included in this study.

Economy

The economy of the area of the study is primarily based on agriculture. The

High Plains is a leading agricultural region in Texas and the United States. Irrigation from underground water supplies makes possible the significant agricultural production in Floyd, Hale, and Swisher counties. Hale county has 352,520 acres and Floyd county has 315,000 acres under irrigation, approximately 56 per cent and 50 per cent of the county area in each case.

Cotton and grain sorghums are the leading crops of the region. The High Plains produces a significant portion of the total United States and world cotton crop, the annual total being near 2,000,000 bales. Cotton ginnings for 1970-71 in the five counties amounted to over one-quarter million bales (269,411) of which Hale county produced 140,178.

A major development in recent years has been the increased feeding of cattle in commercial feedlots, concentrated on the High Plains largely because of the extensive supplies of grain sorghums and other feeds. This has stimulated the establishment and expansion of packing plants. Plainview is the site of major beef packing and hog slaughtering plants.

Several manufacturing plants within the area produce farm machinery and irrigation equipment and accessories, and a textile mill is located at Abernathy. The value of manufacturing exceeds $10 million. Petroleum and natural gas production in Hale and Motley counties amounts to $10 million.

Retail sales in the area exceed $125 million and wholesale sales exceed $115 million. The 1970 state and county tax valuation total $134 million for the five counties, while the assessed school tax valuation exceeds $350 million.

Vocational Education Within the Area of the Study

The basic objective of Vocational Education is to provide instruction that will enable the student to become a productive citizen. The historical objective of vocational agriculture was to enable individuals to become gainfully employed in production agriculture on the farm. The objective of vocational homemaking was to prepare individuals for the vocation of homemaker. This objective of homemaking is now termed "useful".

The Vocational Education Act of 1963 and the Vocational Amendments of 1968 indicate that vocational education programs are intended for persons of all ages in all communities, and the courses offered should provide for individual differences in preparing them for gainful employment. The legislation mandates that vocational education include within its scope all occupations which are not considered professional and do not require a baccalaureate or higher degree, considering actual and anticipated occupational opportunities.

Seven major vocational areas have been identified by the United States Office of Education. These are: Agriculture, Distributive Education, Health Occupations Education, Home Economics, Office Occupations, Technical Education, and Trade and Industrial Occupations. The publication Vocational Education and Occupations (12) outlines a system which identifies, defines, and classifies vocational and technical instructional programs offered by State and local school systems, and links the programs to a wide range of occupations found in all areas of the economy. The document consists of two main parts: Part I, Instructional Programs Related to Occupations, contains a list sum-

marizing and coding the substantive content of defined vocational-technical programs and relates these to occupational codes, titles, and worker trait groups found in the Dictionary of Occupational Titles. Part II, Occupations Related to Instructional Programs, contains a list which shows the Dictionary codes, titles, and worker trait groups related to codes and titles of vocational-technical education programs.

The Department of Occupational Education and Technology of the Texas Education Agency has developed a certified list of courses available to Texans correlated to the United States Office of Education codes in the publication referred to above. The type or level of instruction available for each course is given, from kindergarten through secondary, post-secondary and adult. Included are occupationally related courses for orientation, civil defense, basic education, remedial, and miscellaneous supportive courses. (6)

These publications are useful references for educational planning purposes.

Secondary Programs

Secondary programs are available for three types of students, regular, disadvantaged, and handicapped. The 1963 Act dictated that persons with special needs were to be served by vocational education. It defined this target group as "persons who have academic, socio-economic, or other handicaps that prevent them from succeeding in regular vocational education programs." This definition included: (1) those whose physical, emotional, or mental handicaps retard personal achievement, and (2) those whose environments and cultural background inhibit personal, social, and economic achievement.

Agriculture and homemaking maintain some traditional programs. In addition, for

the three types of students there are Cooperative Part-Time Training Programs, and Pre-employment Laboratory Programs in all vocational areas.

The cooperative programs provide for a cooperative arrangement between the school and various businesses, industries, offices, and institutions. The student in a cooperative program must be 16 years of age and in the 11th or 12th grade. Through the cooperative arrangement, the student is in school one-half of each day attending regular high school classes and one class in which instruction is related to a specific occupation. The remaining one-half day the student is on the job as a trainee in a planned program to acquire the job skills and information on a specific occupation.

The Pre-employment Laboratory programs prepare students for careers but do not include the concurrent part-time employment. In the regular pre-employment programs the student attends classes for three consecutive hours in a specific trade shop within the school to develop the job skills and acquire the related information needed to enter employment in a skilled trade upon graduation. During the remaining half day, these students are enrolled in regular high school courses.

Coordinated Vocational-Academic Education - C.V.A.E. Programs are designed for students with special needs but not for special education students. The students in C.V.A.E. are those who have not been motivated in regular vocational or academic programs. They may be slow learners, under-achievers, potential dropouts, and are usually behind normal grade level by one or more years. The purposes of the program are to provide gainful employment training in occupations related to the particular area of emphasis, e.g. home economics, agriculture, industry, and to provide instruc-

tion in the academic areas of English, math, science and social studies, which is related to the world of work and the occupation, and which is on the level where students can achieve. The program normally begins in the seventh and eighth grades within an occupational cluster. Continuing into high school the program becomes more specialized in one or two single-skill areas. Hopefully, these students will progress in both the vocational and academic programs so that they can enter the regular programs. At any point when the student might drop out of school, he should have some occupational and academic skills to help him find a job and to succeed on the job.

Special Education - Vocational education is offered to persons who are physically or mentally handicapped or seriously emotionally disturbed who are otherwise eligible for vocational education. Because of their handicap they cannot succeed in regular vocational programs without special education assistance or require a modified vocational program. Programs of this type are designed to acquaint the student with the world of work and to enable him to acquire the social and occupational skills to become a functional worker in the labor market.

Existing Secondary Programs in the Area

The following list of programs by schools identifies existing secondary vocational education programs in each school within the five-county area. Enrollments per program for 1971-72 are given, estimates for 1972-73, and projections to 1976-77.

BRISCOE	Grade Level	1971-72	1972-73	1976-77
Quitaque				
Production Agriculture	9/12	23	25	32
Homemaking - Useful	9/12	30	34	37
		53	59	69

BRISCOE (cont'd.)	Grade Level	1971-72	1972-73	1976-77
Silverton				
Production Agriculture	9/12	45	45	48
Homemaking - Useful	9/12	35	35	37
		80	80	85

Quitaque consolidated with Turkey in the Valley Independent School District for 1972-73
May 1971 annual plan used - 75-76 projections used for 76-77 year, 72-73 estimated.

FLOYD	Grade Level	1971-72	1972-73	1976-77
Floydada				
Production Agriculture	9/12	105	113	110
Homemaking - Useful	9/12	115	101	90
Combination Coop. Ag & Production	11/12	24	29	35
Distributive Education	11/12	35	32	30
Combination D.E. Coop. & Pre-employment Lab	10/12	x	43	45
Industrial Cooperative Training	9/12	x	x	20
Special Education Home & Community Services	7/12	14	15	15
		293	333	345
Lockney				
Production Agriculture	9/12	43	51	55
Homemaking - Useful	9/12	39	40	45
Combination Homemaking & Home Economics Coop. Education	10/12	35	32	35
C.V.A.E. Small Engine Repair	7/9	23	30	30
C.V.A.E. Home & Community Services	7/9	x	x	20
		140	153	185

HALE	Grade Level	1971-72	1972-73	1976-77
Abernathy				
Production Agriculture	9/12	48	50	50
Tractor Mechanics & Prod. Ag. Combined	11/12	28	38	50
Homemaking - Useful	9/12	63	70	75
C.V.A.E. - Furniture & Upholstery Repair	9/12	26	30	30
Special Education Home & Community Services	9/12	14	15	15
		179	203	220

HALE (cont'd.)	Grade Level	1971-72	1972-73	1976-77
Cotton Center				
Production Agriculture	9/12	30	30	30
Homemaking - Useful	9/12	31	36	36
		61	66	66
Hale Center				
Production Agriculture	9/12	52	x	x
Combination Coop. Ag. & Production	9/12	x	50	55
Homemaking - Useful	9/12	48	66	70
Special Education Vocational Work Study Program	9/12	x	10	15
		100	126	140
Petersburg				
Production Agriculture	9/12	35	40	40
Homemaking - Useful	9/12	26	30	30
Special Education Home & Community Services	7/12	15	15	15
Special Education General Mechanical Repair	7/12	15	15	15
Occupation Orientations	7/12	x	(140)	(140)
		91	100	100
Plainview (Area Vocational School)				
Production Agriculture	9/12	38	41	40
Coop. & Production Ag. Combined	9/12	60	62	63
Homemaking - Useful	9/12	328	340	345
Home Economics Cooperative Education	11/12	25	32	33
Metal Trades Technology	11/12	22	28	28
Auto Mechanics Technology	10/12	23	30	30
Building Trades Technology	10/12	24	30	30
Cosmetology	11/12	26	32	32
Vocational Drafting (Tech.)	10/12	21	28	28
Vocational Electronics (Tech.)	10/12	26	30	30
Cooperative D. E.	11/12	42	50	50
Industrial Cooperative Training	11/12	38	45	47
Vocational Office Education - Pre-employment Laboratory	11	28	31	31
Vocational Office Education - Coop.	12	21	28	30
C. V. A. E. Office Duplication	7/8	29	x	x
C. V. A. E. Office Duplication	9/10	x	28	28
C. V. A. E. Upholstery	7/8	27	28	28

HALE (cont'd.)	Grade Level	1971-72	1972-73	1976-77
Plainview (cont'd.)				
Special Education Home & Community Services	7/12	22	25	25
Special Education Industrial Building Trades	7/12	7	10	12
Special Education Auto Mechanics	7/12	6	8	10
		813	906	920
MOTLEY				
Matador				
Production Agriculture	9/12	23	24	30
Homemaking - Useful	9/12	53	48	36
		76	72	66

Flomot and Roaring Springs do not offer Vocational Education Courses.

SWISHER				
Happy				
Production Agriculture	9/12	54	57	61
Homemaking - Useful	9/12	45	48	51
		99	105	112
Kress				
Production Agriculture	9/12	40	40	40
Homemaking - Useful	9/12	39	39	39
		79	79	79
Tulia (Area Vocational School)				
Production Agriculture	9/12	54	60	70
Cooperative Agriculture	11/12	15	15	23
Homemaking - Useful	9/12	80	80	70
Home Economics Coop. Education	11/12	x	15	25
Vocational Office Education Pre-employment Lab	10/12	22	22	22
Distributive Education (Coop.)	11/12	29	30	30
Auto Mechanics Technology	10/12	27	25	25
Building Trades Technology	10/12	13	25	25
C.V.A.E. General Construction Trades	7/8	27	25	30
C.V.A.E. General Metal Trades	9/12	30	28	28
C.V.A.E. Homemaking	7/8	21	25	28
Special Education General Mechanic Repair	7/8	16	22	30

SWISHER (cont'd.)	Grade Level	1971-72	1972-73	1976-77
Tulia (cont'd.)				
Special Education Home & Community Services	7/8	21	24	30
		355	396	436
TOTAL - All Schools		2,419	2,678	2,823

From the preceding list of vocational education programs, the enrollment and projected enrollments for areas of emphasis have been combined from the five counties. The areas of emphasis are: (1) Useful homemaking and production agriculture combined as home- and farm-related courses. (2) Regular programs leading to gainful employment in off-the-farm occupations including cooperative and pre-employment laboratory programs. (3) programs for the disadvantaged (C.V.A.E.), and (4) programs for the handicapped (special education). Table I presents this information.

TABLE I

VOCATIONAL EDUCATION PROGRAMS ENROLLMENT
IN AREAS OF EMPHASIS

	1971-72	1972-73	1976-77
Production Agriculture) Useful Homemaking)	1,604	1,669	1,704
Regular Occupational Programs	502	656	715
Programs for Disadvantaged	183	194	222
Programs for Handicapped	130	159	182
	2,419	2,678	2,823

Post-Secondary Programs

Southwest Business College - Southwest Business College, a proprietary business college is located in Plainview and offers programs in court reporting and secretarial fields. It is accredited by the Accrediting Commission for Business Schools, and approved by the Texas Education Agency, and the National Shorthand Reporters Association. The student applicant must be a high school graduate or equivalent.

Three diploma programs are offered: Court Reporting, an 18 month program, Legal-Medical Secretarial, 12 months; and Secretarial and General Office, nine months. Thirty-one subjects are offered. Approximate enrollment is 100 students of whom 70 per cent are in Court Reporting and 30 per cent are in the secretarial programs. Some 65 per cent graduate and receive a diploma.

Licensed Vocational Nursing - Licensed Vocational Nurse training is available in two programs, one in Plainview and one in Hale Center. Men and women, age 18 to 50, who have completed high school or the equivalent are eligible for the 12 month programs which begin each September. The programs prepare the graduate for the State Board Examination. The L.V.N. program in Plainview is a cooperative arrangement between the Plainview Public Schools and the Central Plains General Hospital, and enrolls 16 students per session. The L.V.N. program in Hale Center is an internal program of the Hi-Plains General Hospital, enrolling ten students per session. Swisher Memorial Hospital in Tulia has conducted an L.V.N. program in the past, and plans to do so in the future, but at the present time the program is inoperative.

Wayland Baptist College - Wayland Baptist College is a four-year, co-educational

institution located in Plainview. Professional and pre-professional training within the context of the liberal arts is provided in the fields of education, religion, and business Curricula are divided into six main areas from which majors and minors may be chosen usually after completion of a core curriculum from basic liberal arts courses. The six divisions of the college are:

Division	Majors
Religion and Philosophy	Religion
Physical and Biological Science	Biology Chemistry Mathematics
Fine Arts	Music Speech and Theatre
Language and Literature	English Spanish
Social Science	History Law Enforcement Political Science Psychology Sociology
Vocational and Professional Studies	Business Administration Education Physical Education

The College enrolled 1,079 students during the 1971-72 academic year.

CHAPTER III

PRESENTATION OF DATA

The data obtained from the several population groups is presented separately for each group -- employers, high school students, out-of-school youth, and parents. A matrix of occupations - existing and desired - is then presented.

Employers

The Manpower and Training Needs Survey was sent to 1,926 potential employers. Usable forms were returned by 692, which constituted a 36 per cent return.

The responding employers were asked about the availability of certain kinds of workers. Eighty-two per cent said that a shortage of trained workers existed and that quality workers were hard to find. Only 14 per cent said that trained workers were available. When asked about the minimum educational requirements that they required of entering employees, 67 per cent required a high school education, 26 per cent at least an elementary education and only nine per cent required two years of college or more.

Sixty-eight per cent of the responding employers said that they did not have a specific training program for employees in their company. Eighty-three per cent indicated that they would accept qualified graduates of a vocational-technical school. The employer group was asked whether or not they would pay the tuitition of employees who take training to improve their job skills. Forty-seven per cent said no, 38 per cent said yes, partially, and 15 per cent said that they would

pay all of these expenses. Sixty-eight per cent of the employers stated that they informed their employees of the educational opportunities that they might take to improve their job skills.

The employers were asked if the high schools had adequately prepared graduates for entry into employment with their firm. The answers submitted by 41 per cent of the employers were affirmative, but that job preparation was only partial. Thirty per cent said no and 19 per cent were satisfied with high school graduates, while ten per cent did not know. When asked a similar question regarding the adequacy of junior college preparation, 13 per cent said that junior college preparation was adequate, 25 per cent felt it was only partially adequate, 12 per cent said it was not adequate and 49 per cent indicated they did not know. Nineteen per cent of the respondents stated that non-high school graduates performed satisfactorily. Fifty-six per cent felt that they performed satisfactorily but required a great deal of additional training, and 25 per cent said that non-high school graduates did not perform satisfactorily. Fifty-four per cent of the employers thought that high school graduates were employable, but required additional education and training. Twenty-three per cent thought that they were reasonably well prepared for employment and adjusted quickly. Sixteen per cent thought that they were employable but only in unskilled jobs. Only six per cent thought that high school graduates were unemployable because of lack of training.

The employer group was asked to what extent the existing educational facilities in the surrounding area (Briscoe, Floyd, Hale, Motley and Swisher

counties) meet off-the-job training needs for their employees. Thirty-nine per cent rated existing educational facilities as poor, 23 per cent rated them as fair, four per cent excellent, and 33 per cent said they did not know. They were also asked about the adequacy of existing facilities in the surrounding area in terms of meeting the specific occupational and training needs of their company. Twenty-six per cent rated them as fair, 41.7 per cent rated them as poor, again four per cent rated them as excellent and 28.3 per cent did not know.

Forty-one per cent of the employer group were interested in additional training for their present work force during their non-working hours in a local junior college. Twenty-five per cent were not interested and 34 per cent were undecided.

Seventy-nine per cent of the respondents felt that a junior college including vocational-technical training would be valuable to the community. Thirteen per cent thought it would have "some" value. The balance, eight per cent, were undecided or thought it would be of no value. Seventy-eight per cent felt that a junior college was needed in this area and 73 per cent indicated that they would support such a college.

Manpower Needs

The employer survey, in an effort to acquire information about employment projections asked the employer for the number of his employees on March 1, 1972 and estimates for 1973 and 1977. This information was requested for the following groups: Unskilled, Semi-Skilled, Skilled, Clerical and Sales, Semi-Professional

TABLE 2

EMPLOYMENT IN FIVE COUNTIES
(For 1972, 1973, 1977)
REPORTED BY EMPLOYERS

	Employees on March 1			Net Change			Per cent Change		Annual Per cent Change
	1972	1973	1977	1972-73	1973-77	1972-77	1972-73	1972-77	
Unskilled	1,796	1,760	1,855	-36	95	59	-2.0	3.3	.7
Semi-Skilled	1,533	1,693	1,757	160	64	224	10.4	14.6	2.9
Skilled	2,490	2,561	2,650	71	89	160	2.9	6.4	1.3
Clerical & Sales	1,799	1,889	2,107	90	218	308	5.0	17.1	3.4
Semi-Prof.&Tech.	820	906	1,071	86	165	251	10.5	30.6	6.1
Managerial	1,004	1,087	1,154	83	67	150	8.3	14.9	3.0
TOTAL	9,442	9,896	10,594	454	698	1,152	4.8	12.2	2.4

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and Technical and Managerial. Five hundred seventy-eight employers returned usable forms for this portion of the survey. They reported 9,442 employees in 1972 for an average of 16.3 employees per respondent. For 1973, 9,896 employees were projected for an average of 17.1 employees per respondent. For 1977, 10,594 employees were projected for an average of 18.3 employees per respondent. (Table 2) This compares to a total of 15,870 non agricultural employees reported in April 1972 by the Texas Employment Commission. (Table 3)

TABLE 3

LABOR FORCE, UNEMPLOYMENT
IN FIVE SOUTH PLAINS COUNTIES

	Total Labor Force	Unemployed	Total Employment	Manufacturing	Non-Manufacturing	Agriculture
BRISCOE	1,515	75	1,440	15	565	860
FLOYD	5,430	150	5,280	60	2,280	2,940
HALE	15,620	600	15,020	1,330	8,690	5,000
MOTLEY*	1,120	35	1,085	15	505	565
SWISHER	4,805	130	4,675	100	2,310	2,265
TOTALS	28,490	990	27,500	1,520	14,350	11,630

Source - Texas Employment Commission, April 1972. *Motley - April, 1970

The average employer had 3.1 Unskilled employees in 1972, and projected 3.0 in 1973 and 3.2 in 1977, for a five year increase of 3.3 per cent. The employers showed an average of 2.7 for Semi-Skilled employees in 1972, a 3.3 average per employer in 1973 and a 3.7 average in 1977. This produced an estimated increase in the Semi-Skilled category of 14.6 per cent for the next

five years. Skilled employees average 4.3 per employer in 1972, 4.8 in 1973 and 5.5 estimated for 1977. The employers project a 6.4 per cent increase in the Skilled category by 1977. For 1972 the employers indicated an average of 3.1 employees per respondent in the Clerical and Sales category, for 1973 the average was 3.4 and for 1977 it was an average of 4.0 employees for each employer. The five year increase was 17.1 per cent. The Semi-Professional and Technical employee average for 1972 was 1.5. The 1973 projection was 1.8 for each employer, and in 1977 it was 2.2. The five year projection showed an increase of 30.6 per cent. The responding employers show for 1972 an average of 1.7 Managerial type employees for each employer. The average was 2.0 for 1973 and was projected to 1977 as being 2.2 for each respondent. This constitutes a 14.9 per cent increase in managerial type employees.

Combined employee groups show a 12.2 per cent increase in employees from 1972 to the number projected for 1977, for an annual average increase of 2.4 per cent for all categories of employees.

Variations in Employment

The employers were asked to indicate the largest number and the smallest number of people on their payroll at one time between March 1971 and March 1972. Approximately 16 per cent of the employers failed to respond to this request. Thirty-five per cent said that their employment was the same for each month of the year. This group represented 2,336 employees. The remaining

employers (48.9%) indicated a month of maximum and a month of minimum employment.

Collectively, 20.1 per cent of the employers reported December to be the month of largest total employment, followed by July, 12.4 per cent. February was shown by 17.1 per cent of the employers as the month of lowest employment with January next, 12.6 per cent. The employers with variable employment represented approximately 7,915 employees.

The employers were asked what per cent of the range in their employment was due to seasonal variation rather than a general increase or decrease in business. Fifty-seven per cent of the employers said there was no seasonal influence in their employee variations. Twenty-five per cent indicated that seasonal influences contribute to all of their employment variation. Table 4 presents this information by counties.

Employers were also asked what per cent of their total employee force is replaced annually due to severance, disability, retirement or death. Fifty-two per cent of the respondents said these factors do not influence their employee force on an annual basis. Twenty-five per cent indicated that these factors influence their yearly employment variation from one to ten per cent. Table 5 presents this information by counties.

General Educational Background or Training

The employers were asked to indicate the type of business that they operated and to list the general educational background and/or training needed to provide

TABLE 4

EMPLOYERS' ESTIMATES OF SEASONAL INFLUENCE ON EMPLOYMENT

COUNTY	0%	1-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81-90%	91-100%
Briscoe	12	0	0	0	0	1	0	0	1	0	4
Floyd	52	2	1	0	0	1	0	0	1	2	16
Hale	148	9	7	8	0	9	1	1	5	6	77
Motley	10	0	0	2	0	0	0	1	0	0	6
Swisher	45	6	1	2	0	7	0	0	3	4	16
Totals	267	17	9	12	0	18	1	2	10	12	119
	57.17	3.64	1.93	2.57	0	3.85	.21	.43	2.14	2.57	25.48

TABLE 5

ESTIMATED INFLUENCE OF SEVERANCE, DISABILITY OR RETIREMENT ON EMPLOYMENT

COUNTY	0%	1-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81-90%	91-100%
Briscoe	15	3	1	0	0	0	0	0	0	1	0
Floyd	45	17	7	0	2	3	0	0	0	0	3
Hale	141	69	29	15	2	19	0	2	1	2	4
Motley	13	4	1	1	0	0	0	0	0	1	1
Swisher	42	28	8	6	1	2	1	0	1	0	1
Totals	256	121	46	22	5	24	1	2	2	4	9
	52.0	24.6	9.3	4.5	1.0	4.9	.20	.40	.40	.81	1.81

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them with better workers. The various types of businesses described by the respondents were grouped under the following occupational headings. Agriculture, Distributive, Health, Industrial, Office, and Technical. The types of businesses that were generally thought to fall in each category were examined relative to the accumulative educational background and training needs listed by the responding employers.

Agricultural - Forms returned from 84 agriculturally oriented businesses revealed that 20 per cent of the respondents felt that no education was required, six per cent indicated elementary school was required, 64 per cent thought that high school was a necessary requirement, two per cent junior college, six per cent some college and two per cent thought that a college degree was required. Seventeen per cent of these respondents indicated that on-the-job training was adequate preparation for their businesses. Vocational and technical training was listed by 17 per cent of the respondents as being an important background for entering their business. Training and experience in sales was thought to be important by nine per cent of the respondents. Other educational backgrounds listed with somewhat less frequency were bookkeeping, math, English, general business, welding, mechanical training, and secretarial training.

Distributive - The 202 types of businesses that were distributive in nature were grouped and the educational requirements examined. Twelve per cent of the respondents said that there was no minimum educational requirement for entry into their business. Elementary school was required by two per cent of the

respondents, high school by 72 per cent, junior college by 15 per cent and some college by ten per cent. None of the respondents thought a college degree was necessary for entry into their business. Mechanical training was suggested by 13 per cent of the respondents as a necessary preparation for entry into their business. Twenty-three per cent listed vocational and technical training as an essential background. Experience and training in sales was indicated as being a necessary educational background by 14 per cent of the respondents. Eight per cent thought that public relations was important and eight per cent said that on-the-job training was all the preparation their employees needed. Several of the responding employers said that the following education and experience was also important: math, general business, bookkeeping, secretarial and clerical training, and management training.

Health - There were 37 responding businesses which were generally classified as those related to health occupations and the respective educational requirements were compiled. Eight per cent of the responding employers set elementary school as the minimum education required for employment in their business. High school was the minimum education required by 40 per cent of the respondents, 12 per cent said that junior college was all that was necessary and eight per cent indicated some college would do, while 32 per cent required a college degree. Nurses training was considered to be an essential educational background by 15 per cent of the employers. Seventeen per cent of the responding employers suggested an educational background of vocational and technical training.

Thirteen per cent suggested specific medical training. General business methods was indicated as essential background by ten per cent and ten per cent of the respondents thought that on-the-job training was all the training their operations required. Some of the responding employers stated secretarial and clerical training and a background in public relations were important for employment in their business.

Industrial - The category for industrially related businesses included 114 responses. Forty per cent of the employers indicated that at least a high school education was necessary for employment in their business. Some college was stated as an educational requirement by 18 per cent of the respondents. Thirty-four per cent of the responding employers said that vocational and technical training was an important requirement for their employees. Thirteen per cent stated that on-the-job training was sufficient preparation for their employees. Welding was required training by nine per cent of the responding employers. Other notable requests for education and/or training by employers were: mechanical training, sales, cosmetology, and cooking.

Office - There were 86 survey forms returned from businesses generally classified as office type businesses. High school education was considered a minimum educational requirement necessary for employment by 43 per cent of the respondents. Some college or junior college was considered necessary by 28 per cent of the respondents. Twenty-eight per cent of the responding

employers considered a college degree necessary for employment in their business. Secretarial training was considered a basic requirement by 25 per cent of the respondents, followed by such related training as a 12 per cent need for bookkeeping, eight per cent need for accounting and six per cent for clerical training. Nine per cent of the respondents felt their employees should have training in public relations and eight per cent wanted their employees to have training in general business. A few of the employers suggested vocational training and on-the-job training as being helpful in preparing workers for employment in their businesses.

Technical - Five businesses were identified as those being technically oriented. They indicated a need for technical training as a background for employment in technical areas in their businesses. Other useful training mentioned was general business, math, drafting, and equipment operations.

Summary - Collectively, eight per cent of the responding employers stated that there was no educational requirement for employment in their business. Three per cent said only elementary school was required, 63 per cent said high school was required, and junior college was specifically named by seven per cent. Ten per cent specified some college was required and nine per cent indicated that a college degree was a minimum educational requirement for employment in their business.

Employee Weaknesses

The employer survey requested that each employer make a brief statement as to what he felt were the major personal weaknesses of prospective employees. Table 6 shows the weaknesses listed by the employers and the number and percentage of employers that selected each weakness. "Lack of training" was listed as a weakness by 21 per cent of the respondents. "Unwilling to work and lack of ambition" together made up 29 per cent of the listed weaknesses.

TABLE 6

MAJOR PERSONAL WEAKNESSES OF PROSPECTIVE EMPLOYEES

Weaknesses	No.	Per cent
Lack of Training	108	20.61
Unwilling to Work	84	16.03
Lack of Ambition	67	12.78
Lack of Education	37	7.06
Lack of Interest	33	6.29
Poor Attitude	30	5.72
Lack of Communication	28	5.34
Lack of Experience	26	4.96
Lack of Confidence	20	3.81
Lack of Responsibility	19	3.63
Bad Personal Appearance	13	2.48
Want Too Much Pay	13	2.48
Lack of Loyalty	10	1.90
Lack of Pride	9	1.72
Unstable	8	1.52
Lack of Intelligence	6	1.15
Other	13	2.47

Junior College Support

The employers were also asked to list the ways that they would support a junior college, or if they would not give their support, to state the reason. There were 324 affirmative responses and 136 negative responses. Twenty-two per cent of the employers stated that they would support a junior college "anyway possible". Eighteen per cent said they would lend their support by hiring students and 16 per cent said they would give their "moral support". Fourteen per cent specified financial aid. The ways of support are listed in Table 7.

TABLE 7

WAYS EMPLOYERS WOULD SUPPORT A JUNIOR COLLEGE

Ways	No.	Per cent
Anyway Possible	70	21.6
Hire Students	59	18.2
Moral Support	51	15.7
Financially	44	13.5
Taxes	31	9.5
Send Employees	15	4.6
Offer On-the-Job Training	11	3.3
Advertising	9	2.7
Enroll Children	8	2.4
Technical Assistance	7	2.1
Time	5	1.5
Advisory	4	1.2
Attendance	4	1.2
Patronage	4	1.2
Housing of Students	1	.3
Donate Materials	1	.3

The reasons given by those who chose not to support a junior college are shown in Table 8. Thirty-one per cent listed "college already available" as their reason for not wanting to support a junior college. Twenty-seven per cent were undecided as to why they would not give their support.

TABLE 8

REASONS FOR NOT SUPPORTING A JUNIOR COLLEGE

Reasons	No.	Per cent
College Already Available	42	30.8
Undecided	37	27.2
Unable Financially	17	13.6
College Education Not Needed	15	11.0
Not Needed	14	10.2
Taxes Too High	10	7.0
Too Many Educated People	1	.7

Occupations - Training, Employment, and Supply

The Employer Survey included a form that requested a listing of the occupations pertinent to the employers' business. Usable forms were returned by 550 employers. For each occupational entry the minimum years of education necessary for that job was requested. The training necessary to "function properly on the job" was broken into the following types: on-the-job, formal company program, apprenticeship program, junior college, commercial school, technical institute, and high school. The employers were asked to list the number that they presently employ in each occupation listed on the form. They were also asked to estimate the number that they expect to employ in 1977, and finally the employers were asked to determine the availability of employees for

employment, that is oversupply or shortage.

The occupational listings by employers were grouped into the seven major vocational-technical areas utilized by the United States Office of Education. (12) They are Agriculture, Distributive, Health, Home Economics, Industrial, Office, and Technical. Two other areas - Professional and Miscellaneous - were included for those occupations reported which were not appropriate to the seven major areas.

Minimum Educational Requirement - The opinions of the employers regarding the minimum education necessary to enter the specific occupation listed was examined. This was done relative to each of the occupational areas and collectively.

A relatively normal distribution of educational requirements was noted in most of the occupational areas. The employers reported that high school was the minimum education necessary to enter 67.5 per cent of the occupations. A college degree is necessary for 9.7 per cent of the occupations. Completion of the eighth grade was indicated for 3.2 per cent of the occupations, while no educational requirement was stated for 3.6 per cent of the occupations. These percentages compare favorably with similar results in another part of the survey. There was no more than a five per cent differential between the comparable elements.

The areas of office and industrial occupations showed high school categories approximately ten times greater than any of the other educational requirement categories. The health occupations showed an educational

requirement distribution much different from the rest. There was one health occupation marked in the no education category, seven were marked in the eight year educational requirement, three were marked in the ten year requirement, 20 were marked in the high school category, 32 were listed in the two year college column and the largest group, 36, were placed in the 16 years of education requirement category.

Training For Job Proficiency - The training needed for employment was checked by the employer relative to the occupations he had listed. The

TABLE 9

TYPES OF TRAINING NECESSARY FOR JOB PROFICIENCY BY COUNTIES

COUNTY	On the Job	Formal Company Program	Apprent. Program	Junior College	Comm. School	Technical Institute	High School
Briscoe	52	8	22	5	8	7	15
Floyd	207	48	77	46	50	62	110
Hale	861	180	343	206	253	519	480
Motley	38	2	15	10	9	8	29
Swisher	211	43	71	67	56	64	130
Totals No.	1369	281	528	334	376	660	764
%	31.8	6.5	12.2	7.8	8.7	15.3	17.7

employers indicated that 31.8 per cent of the positions in their businesses required at least on-the-job training. Training associated with high school programs was indicated for 17.7 per cent of the jobs listed. Apprenticeship programs was indicated as a requirement for 12.2 per cent of the jobs, and

TABLE 10

TYPES OF TRAINING NECESSARY TO FUNCTION PROPERLY ON THE JOB BY OCCUPATIONAL AREAS

Occupational Area		On The Job	Formal Company Program	Apprenticeship Program	Junior College	Commercial School	Technical Institute	High School	Total No.	%
Agriculture	No.	79	18	34	6	6	18	30	191	
	%	41.4	9.4	17.8	3.1	3.1	9.4	15.8		100
Distributive	No.	315	114	129	91	62	142	164	1017	
	%	31.0	11.2	12.7	8.9	6.1	14.0	16.1		100
Health	No.	48	1	21	24	7	36	27	164	
	%	29.3	.6	12.8	14.6	4.3	21.9	16.5		100
Home	No.	6	0	4	2	1	3	8	24	
Economics	%	25.0	0	16.7	8.3	4.2	12.5	33.3		100
Industrial	No.	420	84	206	44	50	206	176	1186	
	%	35.4	7.1	17.4	3.7	4.2	17.4	14.8		100
Office	No.	420	49	100	136	238	226	313	1482	
	%	28.3	3.3	6.7	9.2	16.1	15.2	21.2		100
Technical	No.	28	8	14	11	6	21	18	106	
	%	26.4	7.5	13.2	10.4	5.7	19.8	17.0		100
Professional	No.	21	2	7	12	3	1	14	60	
	%	35.0	3.3	11.7	20.0	5.0	1.7	23.3		100
Miscellaneous	No.	32	5	13	8	3	7	14	82	
	%	39.0	6.1	15.9	9.8	3.6	8.5	17.1		100
TOTALS	No.	1369	281	528	334	376	660	764	4312	
	%	31.8	6.5	12.2	7.8	8.7	15.3	17.7		100

training in a technical institute was a requirement for 15.3 per cent of the positions listed by the respondents. Nine per cent of the listed occupations require training in a commercial school, 7.8 per cent in a junior college and 6.5 per cent of the jobs require training in formal company programs. The training requirements of the employers grouped by counties and summarized may be seen in Table 9 . The training requirements of the employers grouped according to occupational areas may be viewed in Table 10.

Employment By Occupational Areas - The number of employees reported by occupation and grouped in their respective areas are displayed in Table 11 These employees are grouped by county and summarized in Table 12. It can be observed from Table 11 that the industrial occupational area is represented with the largest number of employees, approximately 28 per cent followed by office occupations with approximately 18 per cent.

TABLE 11

EMPLOYMENT FOR 1972 GROUPED BY OCCUPATIONAL AREA

OCCUPATIONAL AREA	Number Now Employed	Per cent
Agriculture	612	9.8
Distributive	895	14.3
Health	338	5.4
Home Economics	16	.3
Industrial	1,752	27.9
Office	1,124	17.9
Technical	102	1.6
Professional	872	13.9
Miscellaneous	562	8.9
TOTALS	6,273	100.0

TABLE 12

EMPLOYMENT FOR 1972 GROUPED BY COUNTY

COUNTY	Number Now Employed	Per cent
Briscoe	158	2.5
Floyd	830	13.2
Hale	4,535	72.3
Motley	82	1.3
Swisher	668	10.7
TOTALS	6,273	100.0

The employers estimate that the area of health occupations will have the largest percentage of growth, 32 per cent, by 1977. They also estimate that technical occupations will have approximately 28 per cent increase each by 1977. (Table 13)

TABLE 13

ESTIMATION OF 1977 EMPLOYMENT BY EMPLOYERS

Occupational Area	1972 Number Now Employed	1977 Total No. You Expect to Employ	Net Change	Per cent Change	Annual Per cent Change
Agriculture	612	678	66	11	2.2
Distributive	895	1,002	107	12	2.4
Health	338	447	109	32	6.4
Home Economics	16	19	3	19	3.8
Industrial	1,752	2,119	367	21	4.2
Office	1,124	1,317	193	17	3.4
Technical	102	131	29	28	5.6
Professional	872	860	-12	-1.4	-.3
Miscellaneous	562	662	100	18	3.6
TOTALS	6,273	7,235	962	15	3

The total employment expectations for the five-county area projected to 1977 as seen in Table 2 shows a 12.2 per cent increase in employment from 1972 to 1977. The total employment increase computed from the occupational listing sheet for 1977, Table 13, shows a 15 per cent increase. This represents less than a three per cent differential in estimated employment increase between the two parts of the survey.

Adequacy of Personnel - Collectively, the employers indicated that there was a "short supply" of personnel available for replacement in 64.5 per cent of their positions, an oversupply in 26.7 per cent and that there was adequate supply for 8.8 per cent. The employers also indicate that the health occupation area has a shortage of employees greater in terms of percentage (76.6) than any other occupational area followed by the agricultural occupations, 74.4 per cent (Table 14).

TABLE 14

OVER OR SHORT SUPPLY OF EMPLOYEES

OCCUPATIONAL AREA	Over Supply		Adequate Supply		Short Supply	
	No.	%	No.	%	No.	%
Agriculture	20	23.3	2	2.3	64	74.4
Distributive	86	26.8	34	10.6	201	62.6
Health	10	13.0	8	10.4	59	76.6
Home Economics	5	45.5	1	9.0	5	45.5
Industrial	86	23.4	30	8.2	251	68.4
Office	69	31.2	22	10.0	130	58.8
Technical	13	36.1	1	2.8	22	61.1
Professional	13	40.6	1	3.1	18	56.3
Miscellaneous	33	31.4	12	11.4	60	57.2
TOTALS	335	26.7	111	8.8	810	64.5

High School Students

The data obtained from the High School Student Survey were treated by computer methods, the data generated from the various treatments were valid and the observed variations were insignificant. The survey was administered to a total of 3,637 students, the various treatment totals ranged from 3,631 to 3,637. The several tables presented in this section will reflect this variation.

TABLE 15

NUMBER OF HIGH SCHOOL STUDENT RESPONSES PER SCHOOL DISTRICT

County	School District	Student Responses Per School	Total Per County
BRISCOE	Quitaque	47	
	Silverton	126	173
FLOYD	Floydada	377	
	Lockney	226	603
HALE	Abernathy	258	
	Cotton Center	57	
	Hale Center	176	
	Petersburg	129	
	Plainview	1453	2073
MOTLEY	Flomot	12	
	Matador	90	
	Roaring Springs	19	121
SWISHER	Happy	92	
	Kress	148	
	Tulia	421	661
TOTAL			3631

Student Characteristics

The respondents to the High School Student Survey were enrolled in the fifteen school districts within the five county area. The schools ranged in size from small

rural schools to a medium-sized urban school, presenting a wide range of socio-economic influences on the resulting data. The number of respondents for each school district, by counties, is given in Table 15.

The number of respondents does not represent total enrollment. The survey was administered in each high school on a given day. Students who were absent on that day did not have the opportunity to respond. University Interscholastic League participation contributed to a somewhat reduced total of students who responded. The data were obtained from students in grades 9 - 12, of whom 53.3 per cent were boys and 46.7 per cent were girls. The composition of the student population by grade and sex is given in Table 16.

TABLE 16

HIGH SCHOOL STUDENTS BY GRADE AND SEX
IN FIVE SOUTH PLAINS COUNTIES

Grade	Boys	Girls	Total
Ninth	558	489	1047
Tenth	500	493	993
Eleventh	473	389	862
Twelfth	405	325	730
TOTALS	1936	1696	3632

The high school student population was composed of three major ethnic groups - 72.8 per cent Anglo, 5.7 per cent Black, and 17.8 per cent Mexican-American. Another 3.3 per cent indicated they were in the "other" category. The ethnic composition of the student population is given by counties in Table 17. This composition is consistent with the total population for the five counties.

The Black population in Motley county is higher than the average for the five counties, while in Swisher county it is lower. The Mexican-American population in Briscoe and Motley counties is significantly lower than the average for the five counties. By grades the Mexican-American population of the high schools decreases from 24 per cent in the ninth grade to 11 per cent in the 12th grade.

TABLE 17

ETHNIC GROUPING OF HIGH SCHOOL STUDENTS BY COUNTIES

County	Anglo		Black		Mex.-American		Other	
	No.	%	No.	%	No.	%	No.	%
BRISCOE	150	86.7	10	5.8	9	5.2	4	2.3
FLOYD	428	71.0	37	6.1	116	19.2	21	3.5
HALE	1462	70.5	124	6.0	413	19.9	65	3.1
MOTLEY	91	75.2	18	14.9	6	5.0	5	4.1
SWISHER	514	77.8	18	2.7	102	15.4	24	3.6
TOTAL	2645	72.8	207	5.7	646	17.8	119	3.3

A total of 1,460 students (40.1%) earned money while attending high school by working at a part-time job. The percentage of boys who earned money increased from 43.9 per cent of ninth graders to 68.6 per cent of 12th graders, while among girls the percentage increased from 17.4 per cent of ninth graders to 41.5 per cent of 12th graders.

Twice as many students (2,925) worked during the summer as those who worked during school. Among boys 93.2 per cent of the ninth graders worked during the summer and this percentage increased to 98.0 per cent of 12th graders, while among girls the percentage increased from 60.1 per cent of ninth graders to 72.6 per cent

of 12th graders.

Education of the Students

The students were asked to indicate the course of study they were following in high school. 27.3 per cent named college preparatory, 54.0 per cent a general course of study with no specific area of preparation, 3.7 per cent commercial, while 14.3 per cent indicated a vocational-trade-technical orientation. Commercial and vocational study combined total 18.0 per cent.

Approximately one-third of the seniors indicated college preparatory, which constituted a significant increase over the earlier grades. Also more juniors and seniors were enrolled in a vocational study field, since these grades are the level at which cooperative, trade, and technical courses are placed.

The students were asked to reveal their average grades in high school. For all students, grades 9 - 12, 14.3 per cent averaged A, 48.9 per cent averaged B, 32.7 per cent averaged C, 3.2 per cent averaged D, while only one-half of one per cent were failing. At all grade levels girls averaged higher grades than boys. Only junior boys and senior boys, as groups, were above the average.

The high school students participated in a variety of extracurricular activities. Thirty-one per cent of all students participated in four or more activities, 14.8 per cent participated in three, 19.8 participated in two, 18.6 per cent participated in one, while 15.1 per cent indicated they did not participate in any activities outside of classes. Senior girls were the most active, and were the only group of which more than half participated in four or more activities - 58.5 per cent doing so. The definition of extracurricular activities was left to the individual student.

The degree of access to occupational information in the students' own school was seen by two-thirds of all students as satisfactory, while 18.7 per cent felt that it was excellent, and 13.5 per cent rated it as inadequate. Fewer girls than boys were dissatisfied with this school service, and fewer girls gave an excellent rating, thus a larger percentage of girls than boys gave a satisfactory rating. The exception to this pattern was 11th grade girls, a larger per cent rated the service as excellent and a slightly smaller percentage than boys ranked it as satisfactory.

The availability of counseling in their school was perceived as satisfactory by 59.1 per cent of all students. Compared to the availability of occupational information, a greater number, 27.3 per cent, rated the availability of the counseling service as excellent while 12.5 per cent thought it was inadequate. More boys than girls rated counseling as excellent while more girls than boys rated it as satisfactory.

External Influences on Students

The decisions made by students are influenced from a variety of sources - parents, brothers and sisters, friends, the school, etc. Several questions were presented to the students to examine some of these external influences.

Among all high school students in the five counties, 80.3 per cent were living with both parents, 6.5 per cent with one parent and a step-parent, 8.9 per cent with only one parent, while 1.2 per cent were married. Three per cent lived with others.

The accompanying Table 18 provides a comparison of the level of education completed by the parents of the high school students.

TABLE 18

LEVEL OF EDUCATION COMPLETED
BY PARENTS OF HIGH SCHOOL STUDENTS
IN FIVE SOUTH PLAINS COUNTIES

	Less Than High School		Completed High School		Vocational or Business School or Some College		College Degree		Student Uncertain	
	No	%	No.	%	No.	%	No	%	No.	%
Fathers	1250	34.3	1014	28 0	444	12 2	402	11.1	507	13 9
Mothers	1133	31.3	1217	33 4	590	16.2	297	8 2	393	10 8

Approximately one-third of the parents did not complete high school More mothers than fathers completed high school, while more fathers than mothers acquired a college degree Students were uncertain about the educational attainment level of 13 9 per cent of their fathers and 10 8 per cent of their mothers

Table 19 shows a comparison of the students' perceptions of their parents' feeling regarding the student attending college.

TABLE 19

STUDENTS' PERCEPTIONS OF PARENTS'
FEELINGS REGARDING COLLEGE ATTENDANCE
in percentages

	Insists	Wants Me To If I Want To	Doesn't Care If I Do	Doesn't Want Me To	Won't Allow Me To
Fathers	30 0	54 7	10.1	1.6	.4
Mothers	30 3	59 0	7 4	1 6	3

Thirty per cent of the fathers and 30.3 per cent of the mothers insisted that their child attend college. Among mothers 59 per cent are willing for their child to attend college if the child wants to, while among fathers this percentage drops to 54.7 per cent. More fathers than mothers did not care if their child attends college.

More than half of the students (61 per cent) indicated that they did not have a brother or sister who had attended or was attending college. Of the balance, 24.3 per cent had one, and 14.4 per cent had two or more.

Ninety-four per cent of the students indicated that most of their friends were attending high school. The greatest variation from this percentage was among senior boys, though amounting to only four per cent. When the students considered their best friend, the percentage attending high school dropped to 86.9 per cent with a range of 77.5 per cent for senior boys to 92 per cent for ninth grade girls. The best friend of 18.2 per cent of the senior boys and 18.8 per cent of the senior girls were already graduated from high school, attending business school, vocational school, or college, or serving in the armed forces.

Even though 95 per cent of the students were living with parents, only 51.4 per cent felt that either parent had the greatest influence on their educational desires. Parental influence on the high school students' educational desires was greatest on ninth graders and decreased steadily through the 12th grade. The influence of best friends on educational desires increased from 3.4 per cent to 9.4 per cent among boys ninth through 12th grade, while among girls it remained

at approximately 7.5 per cent in all grades. The influence of the school or a faculty member increased from 9.0 per cent among ninth grade boys to 14.3 per cent among 12th grade boys. From 15 to 20 per cent of the students were uncertain about external influences on their educational desires.

Career choices of the students were influenced by 32.8 per cent of parents, considerably less than the number of parents who influenced their educational desires. Seventeen per cent of the students indicated they had not decided on a career. The influence by a person established in the occupation of their choice of a career increased from 12.1 per cent among ninth graders to 17.0 per cent among 12th graders.

Post High School Plans

The students were asked whether or not they planned to migrate from the area when leaving high school and to give reasons why. Almost three quarters (73.6 per cent) of them indicated "yes." The reason given by 37.9 per cent was to attend college. "More opportunity elsewhere" was the reason given by 17.6 per cent, and "no jobs in area" or "no jobs that pay well" were reasons for 4.5 and 3.2 per cent respectively. One-third of the students gave "personal reasons, "family moving," "to see other places," "enter armed service," and other unspecified reasons as the basis for moving from the area.

The students were asked where they would prefer to live and work after they had reached their educational goals and assuming a job was available. From the four choices, 17.4 per cent indicated they would prefer to live in their home county, another ten per cent would stay in the area by living in surrounding counties. Seventy per cent indicated they would prefer to move from the area. 39.6 per cent to other

areas of Texas, and 30.4 per cent elsewhere outside the state.

Educational Desires and Expectations

A comparison between the aspirations and expectations of the high school students regarding their education may be made from Table 20.

TABLE 20

EDUCATIONAL DESIRES AND EXPECTATIONS OF HIGH SCHOOL STUDENTS IN FIVE SOUTH PLAINS COUNTIES

	Drop Out Before Graduation		Complete High School		Vocational or Business School or Junior College		Graduate From College		Uncertain	
	No.	%	No.	%	No.	%	No.	%	No	%
Education Desired	42	1.2	537	14.8	946	26.0	1535	42.3	548	15.1
Educational Expectations	51	1.4	764	21.0	948	26.1	1332	36.7	521	14.3

The goal of a college degree for 42.3 per cent of the students was reduced to 36.7 per cent in their expectations. High school graduation was a realistic expectation for 227 more students than those desiring it. Twenty-seven students were more certain of their ability to attain certain educational goals than those who were uncertain of their desires. The number expecting to acquire post-secondary education or training in vocational or business school or junior college remained the same from desire to expectation.

Among the reasons given for possibly not reaching their desired educational goal, 35.2 per cent of the students indicated "interest change," 24.8 per cent indicated "finances," and 23.2 per cent indicated "other." Only 8.1 per cent felt that a lack

of encouragement might intervene with their desired educational goal. Girls were less concerned than boys about their ability and lack of encouragement, these same factors were of less concern to 12th graders than to ninth graders.

To finance their education beyond high school, 42.9 per cent of the students indicated they will work, and 35.9 per cent will rely on their parents. Scholarships will be a basis of financial support for 7.6 per cent, while 7.5 per cent will borrow the money for their post-secondary education.

In answer to the question, "Would you attend a junior college which included occupational and technical education, if it met your needs and were within daily driving distance?" 1 794 or 49.3 per cent of all students answered yes, while only 586, or 16.1 per cent answered no, and 968 or 26 6 per cent were uncertain. Of those who answered yes to this question, there were 251 ninth grade boys and 232 ninth grade girls, among tenth graders, 249 boys and 228 girls, among 11th graders, 270 boys and 190 girls, and among 12th graders, 214 boys and 160 girls.

Occupational Desires and Expectations

Students were asked to indicate whether they would like to enter the same type of occupation as their father. Understandably a high percentage of girls, 85 per cent, responded negatively. Four per cent of all students indicated they intended to follow in their father's occupation and 6.6 per cent that they probably will, while 21.6 per cent were undecided, and 65 7 per cent that they will not. Among boys, those who did not plan to enter the same type of occupation as their father increased from 39.6 per cent of ninth graders to 59.0 per cent of 12th graders.

Occupational choices were indicated by 68 4 per cent of all students, while 10 6 per cent were undecided and 20 9 per cent made no response By grades, occupational choices were made by 59 2 per cent of ninth graders, 68 8 per cent of tenth graders, 73 0 per cent of 11th graders and 75 7 per cent of 12th graders

Following the listing of an occupational choice, the students were asked at what grade level their occupational choice was made Table 21 reflects this information

TABLE 21

GRADE LEVEL AT WHICH OCCUPATIONAL CHOICE WAS MADE BY HIGH SCHOOL STUDENTS
by grades

Grade	Before Ninth Grade		In Ninth or Tenth Grade		In Eleventh Grade		In Twelfth Grade		No Decision	
	No	%	No	%	No	%	No	%	No	%
Ninth	350	33 2	279	26 5					396	37.5
Tenth	171	17 2	496	49 9					308	30.8
Eleventh	101	11.7	218	25 3	257	29.8			275	31 9
Twelfth	63	8 6	82	11 2	150	20 5	239	32 7	184	25 2

The cumulative percentages of students up to grade level reveal that 59 7 per cent of ninth graders had made an occupational choice, 67 1 per cent of tenth graders, 66 8 per cent of 11th graders, and 73 0 per cent of 12th graders These percentages are consistent with the percentages presented previously for the students' specified occupational choices by grade level Further inspection reveals that at each grade level a greater number of students indicated their occupational choice was made prior to their present grade

To enter their desired occupation 10 5 per cent of all students indicated they will be able to do so without any financial aid 34 3 per cent will use parental aid 31 2 per cent will work on another job and 10 5 per cent will borrow money from lending agencies while 10 7 per cent will utilize other sources More boys than girls indicated they would not need help, work on another job or borrow the money if required More girls than boys indicated they will depend on their parents for financial aid Inspection of the data by counties reveals that in Motley county only 7 4 per cent of the students will not need financial help, only 24 8 per cent will use parental aid while 16 5 per cent will borrow money, and 40 5 will work on another job The data for Motley county is the extreme in each case, either above or below the average for the five counties

For the primary reason why they might not enter their desired occupation, 41 0 per cent of all students indicated that a charge of interest may be the reason, while 13 4 per cent indicated that the educational or training demands of their desired occupation may prevent them Physical handicap was indicated by 3 0 per cent and 16 5 per cent indicated other unspecified reasons There was no foreseeable reason, by 23 3 per cent, for not entering their desired occupation At each grade level, more boys than girls indicated there was no foreseeable reason why they might not enter their desired occupation Also, at each grade level, more boys than girls indicated that the educational or training demands might prevent them from entering their desired occupation. Conversely, more girls than boys indicated that a change of interest might prevent them from entering their desired occupation, as well as

other unspecified reasons

Examination of the data by counties reveals that in Motley county a higher percentage (25 6) than in other counties indicate no reason for their not entering their desired occupation A somewhat higher percentage (16 5) indicated that educational and training demands may prevent, while a smaller percentage (33 9) than the other counties indicated a change of interest and a higher percentage (22 3) than the other counties indicated other unspecified reasons.

Out-of-School Youth

The Follow-Up Survey of members of the high school class of 1969 was mailed to 819 potential respondents. This number was reduced to 767, due to incorrect addresses obtained for 52 of the individuals. Usable responses were returned by 346, which constituted a 45 per cent return.

The population of out-of-school youth consisted of 177 male and 169 female respondents, of whom 57 per cent were single and 42 per cent were married Only one per cent were divorced, widowed or separated. Ethnically, 87 per cent of the respondents were Anglo, eight per cent were Mexican-American, three per cent were Black, and two per cent were of other ethnic origins.

High School Education

The out-of-school youth indicated the course of study they took in high school. Forty-four per cent indicated that their curriculum was college preparatory, 40 per cent studied a general curriculum with no specific area of emphasis, and only 16 per cent were enrolled in commercial or vocational-technical programs while in high school.

The youth were asked to rate certain elements of their high school preparation in terms of their experience since leaving high school. Preparation for "getting along with people" was rated as the most valuable. English, math, science, and social studies were ranked next in order. Preparation for the world of work and specific job preparation were rated as being the least valuable to the student. The complete distribution of ratings of these areas of their high school education by the out-of-school youth are given in Table 22.

TABLE 22

VALUATION BY OUT-OF-SCHOOL YOUTH OF SELECTED HIGH SCHOOL SUBJECT AREAS
per cent per subject area

Subject Area	Valuable	Some Value	Little Value	No Value
	Per cent	Per cent	Per cent	Per cent
Getting Along With People	68.3	26.0	3.2	2.5
English	54.2	33.9	10.0	1.9
Math	49.1	38.5	10.7	1.6
Science	37.7	31.6	24.5	6.1
Social Studies	26.2	33.8	28.0	12.0
World of Work	30.4	28.7	17.1	23.8
Specific Job Preparation	26.6	23.2	21.5	28.7

The out-of-school youth credited their parents as having the most influence on their educational choices. The school counselor was the least influential and the teacher was rated as having "some" influence. Table 23 shows the distribution of the sources of influence on their educational choices.

TABLE 23

INFLUENCE OF OTHERS ON EDUCATIONAL CHOICES
OF OUT-OF-SCHOOL YOUTH
per cent of responses

Source	None	Some	Much
	Per cent	Per cent	Per cent
Teacher	25.0	45.2	29 8
School Counselor	61.9	26.0	12.2
Father	18.9	34.6	46.5
Mother	12.2	45.8	42.0
Best Friend	46.6	38.9	14.4

Post-Secondary Education and Training

The out-of-school youth were asked how their parents felt about their attending college. Seventy-seven per cent indicated that their parents were willing for them to attend college if they wanted to. The parents of 18 per cent of the youth insisted that they attend. Five per cent had failed to receive any encouragement

Eight of these respondents had graduated from college in three years. Sixty-four per cent had completed from one to three years of college. Seven per cent had completed one or two years in a technical school. Twenty-seven per cent had not received any post-secondary education, and of these, 14 had not yet completed high school Forty-seven per cent of this group indicated they would have attended a junior college within commuting distance if it offered the programs they desired.

Based on their experiences and observations, the opinion of these youth regarding job training opportunities in the area where they attended high school was sought. More than half, 52.3 per cent, felt that occupational and technical training at the junior college level is needed, while 11.2 per cent felt that high school programs are

adequate, and 15.6 per cent felt that existing programs beyond the high school are adequate. Lack of knowledge in this area was expressed by 21.5 per cent.

Table 24, showing the various programs under which the out-of-school youth received their post-secondary education or training, indicates that some have been in more than one program.

TABLE 24

EDUCATIONAL AND TRAINING PROGRAMS
OF OUT-OF-SCHOOL YOUTH

Program	Number	Per cent of Respondents (346)	Per cent of Responses (433)
College or University	206	59.5	47.6
Junior College	42	12.1	9.7
Trade or Technical School	29	8.4	6.7
Armed Forces School	24	6.9	5.5
Apprenticeship	20	5.8	4.6
Business School	17	4.9	3.9
Correspondence School	16	4.6	3.7
Evening Adult Classes	11	3.2	2.5
Vocational Rehabilitation	2	.6	.47
Federal M.D.T.A.	1	.3	.23
Other	31	9.0	7.2
None	34	9.8	7.9
TOTALS	433	125.1	100.00

The youth were then asked for what specific occupation they had trained or were in training for presently. These occupations were then grouped into the categories previously utilized and the categories are shown in Table 25.

TABLE 25

OCCUPATIONAL CATEGORIES TRAINED OR TRAINING FOR BY OUT-OF-SCHOOL YOUTH

	Number	Per cent
Agriculture	26	8.9
Distributive	7	2.4
Health	19	6.6
Home Economics	3	1.0
Industrial	30	10.3
Office Occupations	69	23.8
Technical	14	4.8
Academic-Professional	103	35.6
Miscellaneous	19	6.6
TOTALS	290	100.0

The specific occupations indicated most often in the above categories were teacher (73 or 23%), secretary, mechanic, medical technician, farmer, and electronics technician.

Those who were not in training or going to school at the present time were asked what was the most important reason why not. There were only 152 responses to this question, indicating that more than half of the out-of-school youth were still in training or in school. Twenty-six per cent of the respondents gave "family responsibilities" as the reason for the termination of their training or education. Economic reasons were indicated by 21 per cent. Also 21 per cent said they had completed all the preparation necessary for their occupation. Eight per cent said that they were "not interested" in further training or education, while 23 per cent indicated other reasons. Interestingly, none of the respondents indicated that the training or educational demands for their specific occupation were too difficult.

Migration

The mobility of the out-of-school youth is revealed in the various moves indicated by them. This is reflected in the fact that 75 per cent had moved at least once after leaving high school, 66 4 per cent having done so within one year. Twenty-five per cent had not moved from their home county. Following previous moves, some had returned to their home counties, reflected by the fact that 46 9 per cent listed their home county as their present address. Forty-three per cent indicated they now live out of their home county but within the state, and 10.1 per cent live outside of Texas. Briscoe county had the highest percentage of former students continuing their home county residence (60%) while Floyd county had the lowest (25.4%). Table 26.

TABLE 26

PRESENT RESIDENCE OF OUT-OF-SCHOOL YOUTH

County	In County		Out of County In State		Out of State	
	No.	%	No.	%	No.	%
BRISCOE	12	60 0	8	40 0	0	0 0
FLOYD	15	25.4	35	59 3	9	15.2
HALE	92	50.8	70	38.6	19	10.4
MOTLEY	5	33.3	9	60.0	1	6.7
SWISHER	38	54.2	26	37.1	6	8 0
TOTAL	162	46.9	148	42.8	35	10.1

The individuals of this group who changed residence at any time during the three years following high school attendance did so at the rate of 2.5 times per person based on a total of 628 indicated moves. Forty per cent of the moves were within the migrant's home county, 48.3 per cent were to other areas within the state, while 12.2 per cent

of the residential changes involved cities of other states or countries. Table 27.

TABLE 27

CHANGES OF RESIDENCE
OF OUT-OF-SCHOOL YOUTH

Home County	Within County	Out of County In State	Out of State
	Per cent	Per cent	Per cent
BRISCOE	38.2	55.8	5 8
FLOYD	41 2	47.3	11.4
HALE	39 2	47 1	13 6
MOTLEY	32.0	53.5	14.2
SWISHER	42.8	49.5	7.6
TOTAL	39.8	48 3	12.2

Note - Based on 628 reported changes of residence

Reasons for moving were reported for 307 of the moves indicated. Of these reasons, 52 per cent were for the purpose of attending a school or college, 42 per cent were for job purposes, either self or spouse, and six per cent were for other reasons

These youth were asked to assume a job in their desired occupational field was available after they had achieved their occupational goals, then to indicate their preferred area of residence. Forty-six per cent selected "the state of Texas in general," 24 per cent indicated their home county, 11 per cent the surrounding counties, while 18 per cent would prefer to live and work outside of Texas

Occupational Status

The out-of-school youth were asked their present employment status. Forty-four per cent were employed full time, 29 per cent part time, and 28 per cent

indicated they were not presently employed More than half the employed group (58%) indicated they were not employed in the occupation in which they expected to be when they left high school The same percentage indicated they were not employed in the occupation for which they had trained or were training for at the post-secondary level

The influence of others on the occupational choices of this group was similar to that exerted on educational choices. Again, parents seemed to have the greatest overall influence, though a person in the occupation was quite influential. School and employment counselors had the least influence Table 28 shows the variety of ratings of the influence of others.

TABLE 28

INFLUENCE OF OTHERS ON OCCUPATIONAL CHOICES OF OUT-OF-SCHOOL YOUTH

Source	None	Some	Much
	Per cent	Per cent	Per cent
Teacher	49.2	30.9	19.9
School Counselor	77.5	17.1	5.4
Father	27.7	42.3	30.0
Mother	31.6	43.5	30.0
Best Friend	62.1	30.3	7.6
Employment Counselor	82.6	12.5	4.9
Person in Occupation	37.6	26.9	33.6

The 228 individuals of this group who were employed indicated the title of their job. These job titles were grouped into the seven categories plus miscellaneous. Three gave their job title as teacher; this title is included in miscellaneous The titles indicated most frequently were, clerk (38 individuals), secretary (23), labor (23),

farm (20), and sales (14). Table 29 presents the frequency within each category and per cent of responses

TABLE 29

EMPLOYMENT BY CATEGORIES
OF OUT-OF-SCHOOL YOUTH

	Number	Per cent of Responses
Agriculture	24	10 5
Distributive	17	7 5
Health	22	9 7
Home Economics	5	2.6
Industrial	55	23.7
Office Occupations	68	29 8
Technical	8	3 5
Miscellaneous	29	12.7
TOTAL	228	100 0

These jobs were obtained through a variety of sources. Forty-seven per cent were obtained by applying directly to an employer, 19 5 per cent through a relative, 17 5 per cent through a friend, nine per cent through a private employment agency, and the remainder through other sources

Sixty per cent of these youth indicated they had decided what type of work they would like to be doing five years in the future. Then 66 per cent listed a specific desired occupation. The desired occupations are grouped by categories in Table 30.

The specific occupations desired by the out-of-school youth are included in the matrix at the end of this chapter.

TABLE 30

DESIRED OCCUPATIONS OF
OUT-OF-SCHOOL YOUTH

	Number	Per cent of Responses
Agriculture	28	12 3
Distributive	13	5.7
Health	21	9 3
Home Economics	9	4.0
Industrial	24	10 6
Office Occupations	37	16 3
Technical	15	6.6
Professional (Academic)	67	29.5
Miscellaneous	13	5.7
TOTAL	227	100 0

Parent Survey

The Parent Survey was returned by 756 parents of seventh graders, representing approximately two-thirds of those who were solicited. The respondents were divided as follows. 416 mothers, 326 fathers, and 14 guardians. The average age of the respondents was in the range of 35 to 39 years. Ninety-one per cent were married, while the remainder indicated their marital status as being either separated, widowed, or divorced.

Sixty-six per cent of the parents were Anglo, 25 per cent Mexican-American, five and one-half per cent Black, and three per cent belonged to other unspecified ethnic groups. Among the counties, Swisher had the smallest percentage of Black respondents while Motley had the largest. Hale county had the largest percentage of

Mexican-Americans, while Briscoe had the smallest. These trends are consistent with the general population and the high school population.

The average parent responding to the survey had graduated from high school. Twenty-seven per cent had completed from one to eight years of school, 16.3 per cent from nine to eleven years, and 32 per cent completed high school. In addition, 13.3 per cent had completed one to three years of college, and 11.4 per cent were college graduates.

Employment

Among all parent or guardian respondents, 41 per cent indicated they were full time employees, ten per cent were part time employees, and 18 per cent were self employed. Twenty-six of the parents indicated they were homemakers, and less than two per cent were retired. The unemployment rate among the parents was 3.8 per cent, which was less than the national rate, and near the state rate of unemployment. Forty-five per cent of the employed parents had been at their present employment for six years or more, 26 per cent for three to five years, and 28.4 per cent less than three years.

More than half, 51.7 per cent, of the parents worked for employers who had only informal or on-the-job training programs. Eighteen per cent of the parents' employers had a formal company training program. For training the employees acquire on their own time, 14.3 per cent of the employers keep records, while 16.2 per cent of the employers give financial or promotional consideration to employees who take additional training.

Adult Education

The parents were asked if they had recently considered enrolling in some type of

adult education course. Forty-one of those responding indicated yes They were then asked to list the courses they would like to take, if available. A total of 383 responses to this question resulted The areas mentioned most were academic and office occupation courses The courses desired by parents are listed by occupational and academic categories in the matrix at the end of this chapter

The parent group was asked to suppose that courses were readily available in an adult education program and to indicate the kind of help these courses would provide. The greatest number of respondents, 37 per cent, were interested in becoming "a better informed person." Twenty-six per cent would enroll to improve themselves in their present job, while 25 per cent would enroll to retrain for a new job or occupation. Twelve per cent were interested in such courses to help them carry out everyday tasks around the home.

The parents indicated the distance they would be willing to commute in order to attend an adult evening class. Thirty-four per cent would be willing to commute locally - up to four miles one way. Thirty-five per cent would be willing to commute up to 15 miles, 19.3 per cent up to 30 miles, and 12 per cent beyond 30 miles. (See Table 32)

For recognition upon the completion of adult courses, a certificate of completion would be adequate for 44 per cent of the parent group, 22 per cent would want college credit, and five per cent would want their employer notified. Twenty-nine per cent would not ask for recognition.

Education of Children

The parents were asked how many dependent children they had at home. Seven per cent indicated one, 22.8 per cent had two, 28.2 per cent had three, 18.4 per cent

had four, and 23.2 per cent had five or more.

The level of education that the parents desire for their children to complete is compared with the level they really expect them to complete as shown in Table 31. As with the high school students, the expectation is less than the desire.

TABLE 31

PARENTS' DESIRES AND EXPECTATIONS
FOR THE EDUCATION OF THEIR CHILDREN
per cent of responses

	1 - 8 Years	9 - 11 Years	Graduate High School	2 Years College or Vocational-Technical School	B S Degree
Desired Level	.5	1.0	20 0	21.2	57.4
Expected Level	2.1	2.7	28 7	26.9	39 7

The willingness of the parents to send their children to a post-secondary vocational-technical training school located within commuting distance resulted in an affirmative response from 82 5 per cent. Among the 58 respondents who were not willing to send their children to a vocational-technical training school 43 indicated they would want a more academic program available, while seven indicated they were not financially able. The remaining eight listed other reasons.

The parents were willing to permit their children to commute a greater distance to attend a vocational or technical school than they themselves were willing to drive to attend adult education classes. Table 32 shows a comparison between the distances parents were willing to commute and the distances they were willing to permit their children to commute to a post-secondary institution.

TABLE 32

OPTIMUM COMMUTING DISTANCES TO A
POST-SECONDARY INSTITUTION
PARENTS AND CHILDREN

Commuting Distance In Miles (One Way)	Parents Per cent	Children Per cent
0 - 4	34.2	13 4
5 - 14	34.9	23.6
15 - 29	19.3	37.9
30 - 49	7.8	13.5
50 +	3.8	11.6

Need and Support for a Junior College

A junior college including occupational and technical training was thought to be valuable by 76 per cent of the parents, while 13 per cent indicated that it would be of some value. Only three per cent thought such an institution would be of little or no value. Indecision was indicated by 7.8 per cent.

When asked if they felt a junior college is needed in the area, an affirmative answer was given by 78.6 per cent of the parents. Willingness to support a junior college was expressed by 69.9 per cent of the respondents. They were then given the opportunity to express specific support or non-support for a junior college. There were 315 responses by the parents listing specific ways of support, which are shown in Table 33.

There were 177 responses listing specific reasons for non-support, which are shown in Table 34.

Ten per cent of the parents had completed a Manpower and Training Needs Survey form at their place of business or employment.

TABLE 33

PARENTAL SUPPORT FOR A JUNIOR COLLEGE

Specific Ways	Times Listed	Per cent of Responses
Anyway Possible	86	27 3
Enrolling Children	85	27 0
Donations	63	20 0
Taxes	37	11 7
Enrolling Self	30	9 5
Other	14	4 5
TOTAL	315	100 0

TABLE 34

PARENTAL NON-SUPPORT FOR A JUNIOR COLLEGE

Specific Reasons	Times Listed	Per cent of Responses
Financially Unable	74	41 8
College Already Available	49	27 7
Undecided	31	17 5
Tax Load Too Great	10	5 7
Not Needed	10	5 7
Other	3	1 6
TOTAL	177	100.0

Existing Occupations and Desired Occupations

This section presents information from the four populations surveyed regarding occupations and academic study. The occupations reported by employers are grouped into the seven occupational categories utilized previously in the study, plus professional and miscellaneous, with the number reported in the occupation given. Matched with this information is the number of high school students, out-of-school youth (follow-up survey), and parents who expressed a desire for particular occupations. Included is the desire for academic study expressed by the respondents. The unstructured response allowed each respondent resulted in somewhat inaccurate terminologies. Where the desired occupations did not match any of the occupations reported by employers, a continuation of the listing has been included separately within categories and the desired academic work as a separate category. The numbers in each occupation from the employer surveys are only those reported and do not accurately reflect the true number in that occupation throughout the five-county area.

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
AGRICULTURE	618	298	28	8
DISTRIBUTIVE	897	92	13	8
HEALTH	339	243	21	24
HOME ECONOMICS	15	79	9	19
INDUSTRIAL	1771	421	24	40
OFFICE OCCUPATIONS	1124	395	37	121
TECHNICAL	99	192	15	10
MISCELLANEOUS	555	256	13	12
PROFESSIONAL	874	475	65	23
ACADEMIC		56	2	110
	6292	2507	227	375

AGRICULTURE

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Agricultural Engineering	1	4		4
Agricultural Research	8			
Agronomist	8	2		
Cattle Buyer	3			
Chemical Distribution	13			
Conservation Technician	11	1		
Cowboy	40	8		
Elevator Superintendent	30			
Farm Demonstration Agent	2	3		
Farm Hand	15			
Farm Supervisor	3			
Farmer	2	103	22	1
Fertilizer & Chem. Sales	7			
Fertilizer & Chem. Technician	2			
Gin Labor	17			
Ginner	16	1		
Grain Blender	3			
Herdsman	3			
Lab Assistant	5			
Manager	4			
Meat Processor	394	3		1
Mill Operator	13			
Millwright	1			
Nursery Worker	4	1		
Scale Operator	2			
Skilled Personnel	6			
Truck Driver	5			
Agribusiness		3		
Agriculture (General)		40		
Agricultural Economics		2		
Agricultural Scientist			1	
Animal Grooming		1		
Animal Husbandry		7		
Feedlot		14	3	2
Feedlot Nutrionist		1		
Forest Ranger		8		
Forestry		12	1	
Game Warden		4		
Horseshoeing		1		
Horsetraining		2		
Lab Technician			1	
Livestock Management		14		
National Parks & Wildlife		2		
Rancher		60		
Wildlife Conservationist		1		

DISTRIBUTIVE

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Assistant Manager	9			
Business Manager	2	17		
Cafeteria Director	11			
City Manager	13			
Food Manager	6			
General Manager	254	7		4
Gin Manager	3	1		
Industrial Manager	8			
Office Manager	63			
Pharmacist	6	15	2	
Produce Manager	7			
Production Manager	5			
Sales Clerk	11			
Sales Manager	34			
Salesman	333	11	4	1
Store Manager	13	7		
Supervisor	102			
Textile Manager	2			
Transportation Manager	1			
Warehouse Manager	14			
Airline Manager		11	1	
Marketing		14	4	1
Motel Manager			1	
Pharmacist Assistant		1		
Real Estate		8		2
Restaurant Manager			1	

HEALTH

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Ambulance Attendant	3		1	
Anesthetist	3			
Dental Assistant	5	5		
Dental Hygienist	1	9		
Dietitian	1	8		
Food Service Employees	33			
Food Service Manager	1			
Housekeeper	36			
Maintenance	8			
Medical Technician	41	12	6	1
Nurse Aide	93	5		
Licensed Vocational Nurse Registered Nurse	52) 38)	125	11	22
Operating Room Technician	7			
Physical Therapist	6	11	3	
Sanitarian	4			
Radiology	7	7		
Dietitian Aide		1		
First Aid				1
Medical Librarian		3		
Medicine (General)		41		
Occupational Therapist		6		
Pathologist		1		
Speech Therapist		9		

HOME ECONOMICS

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Alterations	3			
Home Demonstration Agent	2			
Seamstress	8			5
Tailor	2			
Home Economics (General)		18	3	14
Housewife		61	6	

INDUSTRIAL

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Advertising Agent	1		10	12
Appliance Repair	17			
Auto Body Work	12	11		
Auto Mechanic	281	163		
Auto Painter	1			
Auto Upholstery	1			
Barber	2	2		
Bricklayer	3			
Bus Driver	30			
Cafeteria Worker	20			
Carpenter	6	7		
Construction	3	7		1
Cook	97	1		
Cosmetologist	11	55	4	1
Custodian	98			
Deliveryman	3			
Diesel Mechanic	3			
Driller (Petro)	6	2		
Dry Cleaner	29			
Electrician	47	11	1	2
Embalmer	4			
Equipment Operator	123			
Equipment Supervisor	1			
Estimator	1			
Fireman	27		1	
Florist	2	5		
Gas Service (Utility)	7			
Glass Glazier	2			
Lineman	43			
Lineman Helper	8			
LPG (Petro)	15			
Machinist	57			
Machinist Assistant	4			
Mail Carrier	30	1		
Maintenance	44			
Meter Reader	1			
Painter	2			
Parts Personnel	41			
Photography	2	10	1	3
Pilot	5		1	
Plant Operator	58			
Plumber	7	1		
Plumbers Helper	2			
Policeman	54	35	1	
Printer	11			

INDUSTRIAL (Continued)

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Projectionist	1			
Railroad Oiler	1			
Repairman	14			
Road Maintenance	23			
Roofer	4			
Serviceman (Electrical)	11			
Serviceman (General)	9			
Sheet Metal Fabricator	16			
Shop Foreman	9			
Telegrapher	4			
Textile Worker	76	1		
Track Supervisor	7			
Train Agent	2			
Trainman	6	1		
Truck Driver	182	12		
T.V. Technician	5	1	1	
Type Setter	7			
Waiter	56			
Warehouseman	48			
Watchmaker	1			
Water Analyst	10			
Water Utility	9			
Welder	47	19		13
Window Dresser	1			
Aircraft Mechanic		1		
Airline Hostess		41	1	
Auto Parts		2		
Bartender		1		
Commercial Art		17		
Factory Worker		1		
Government Worker		3	2	2
Jeweler		1		
Lumberman		2		
Miner		1		
Mortician		1		
Oilfield Contractor		1		
Paving Contractor		1		
Public Utilities			1	
Refrigeration		2		2
Upholstering		1		2
Woodworking				2

OFFICE OCCUPATIONS

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Accounting	30	26	8	10
Adjuster	1			
Bookkeeper	158	5		34
Business Manager	1			
Clerk	493	11	8	1
Computer Operator	1	3		
Credit Man	14			
Insurance Claims	4	1	1	
Loan Field Representative	2	1		
Machine Operator	15			
Programmer	1	4	1	7
Secretary	389	225	16	20
Stenographer	6	1		
Telephone Operator	9	3		
Banking		7		
Business (General)		70	2	21
Business Machines		1		4
Court Reporting		16		
Data Processing		12		
Federal Inspector			1	
Key Punch Operator		3		
Office Administration		6		
P.B.X. Operator				2
Shorthand				4
Tax Aide				1
Typing				17

TECHNICAL

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Abstractor	2			
Air Conditioning & Heating	11			
Chemical Technician	1		3	
Chemist	2			
Draftsman	5	26		
Electrical Technician	15		6	
Engineer	14	27	1	
Engineering Technician	13			
Lab Technician	2	18		
Mechanical Technician	1	1		
Radio Operator	11			
Research Technician	2			
Technician	4	1		
Water Treatment	16			
Architect		24	1	
Aviation		16		
Broadcasting			2	
Communication		9		
Computer Technician		5		
Electronics		38		10
Fashion Design		3		
Interior Design		22	2	
Lighting Director		1		
Surveyor		1		

MISCELLANEOUS

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Building Inspector	1			
Buyer	5			
Case Worker	1			
Child Care	8	11	1	
Internal Revenue Service	7			
Laborer (Unskilled)	341		1	
Municipal Department Superintendent	9	2		
Para-Professional	122			
Park Maintenance	9		1	
Personnel Worker	10			
Reporter	12			
Social Worker	10	27	5	1
Teacher Aide	20	3	1	
Armed Services		43	2	
Art		25		8
Astronomer		1		
Auctioneer		1		
Cartoonist		2		
Church Work		1		
Dancer		2		
Dramatics		3		
Journalist		3		3
Missionary		5		
Model		23		
Music		49		
Nun		1		
Poet		1		
Politician		1		
Pre-Med		2		
Pre-Vet		1		
Private Investigator		2		
Racing		5		
Recreational Director			1	
Scouting		2		
Sports		28		
Stone Hustler		1		
Trade School		1		
Veterinarian Assistant		3		
Vocational Office Education		2		
Writer		5		
Youth Work			1	

PROFESSIONAL

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Attorney	2 (34)	53	5	3
Company President	2	4		
Company Vice-President	1			
Librarian	5	4		
Minister	7	11	2	
Municipal Director	5			
Music Director	7			
Organist	4			
Physician	2 (41)	47	2	
Professional Staff (Schools)	827	186	51	
Public Relations	1	2		3
Research Director	2			
Scientist	9	7		
Actuary		1		
Archeologist		1		
Business Law		1		
Chiropractor		3		
Civil Engineering			2	
Coach		52		
Counselor		7	1	1
Dentist		8		
Ecologist		2		2
Environmentalist		1		
Herpetologist		1		
Library Scientist				4
Meteorologist		3		
Microbiologist				1
Nuclear Physicist		1		
Oceanographer		15		
Opthalmologist		1		
Optometrist		2		
Orthodonist		1		
Physicist			1	
Psychiatrist		4		
Psychologist				8
Special Education		17		1
Veterinarian		40	1	

ACADEMIC

	Employer Survey	High School Survey	Follow-Up Survey	Parent Survey
Academic (General)				3
Bible				1
Bio Chemistry		2		
Biology		6	2	1
Black History				1
Chemistry		5		1
Church History		1		
Consumer's Education		1		
Economics				3
Education				17
English		2		22
Foreign Language				2
History		3		7
Marine Biology		7		
Math		5		16
Philosophy				1
Physical Science		1		
Psychology		19		
Reading				6
Science				1
Sociology		4		4
Spanish				20
Speech				4

CHAPTER IV

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This study was initiated to determine the need for occupational and technical education in five counties of the South Plains of Texas situated in the northwestern part of the state. Data were gathered from four groups within the geographic area -- employers, high school students, out-of-school youth, and parents. Current and anticipated labor market needs were identified. The educational interests, aspirations and expectations of in-school youth, out-of-school youth, and parents pertaining to occupational and technical education were determined. Existing programs for occupational and technical education were examined.

The findings are based on a synthesis of the data obtained.

Findings

Employers report a shortage of trained and quality workers available for replacement in two-thirds of the existing occupational positions in the five-county area. The shortage is most critical in the areas of health and agriculture related occupations, followed by industrial and distributive occupations.

Employers project a 12.2 per cent increase in the number of employees from present levels over the next five years when reporting employees by skill level. The greatest expansion will be among semi-professional and technical workers, the rate being over 30 per cent for the five year period, or six per cent per year. Needs for additional clerical and sales personnel, managerial, and semi-skilled employees are also signifi-

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cant. When reporting their employees by occupations, the employers projected a 15 per cent increase in the number of employees from present levels over the next five years. The greatest expansion will occur in health, technical and industrial occupations.

Based on the total labor force and considering increases due to expansion projected by employers, factors of attrition, and the training necessary for particular occupations, there are annually approximately 400 occupational opportunities requiring post-secondary training within the five-county area.

Twenty-three per cent of the employers felt that high school graduates were prepared for employment, while 19 per cent indicated non-high school graduates performed satisfactorily. More than half the employers indicated that both groups require additional education or training.

The preparation of high school graduates for job entry employment by the schools was adequate for one of five employers, partially adequate for four of ten employers, and inadequate for three of ten employers. One-half the employers indicated they did not know about the adequacy of junior college preparation; of the remainder, one of four thought it was adequate, the same number thought it was inadequate, while one-half thought it was only partially adequate.

The employers rated the adequacy of existing facilities in the five-county area for meeting the specific occupational and training needs of their company and the off-the-job training needs of their employees. The results were approximately the same for both needs. Three of ten employers indicated they did not know. Four per cent

rated them excellent in each instance, approximately one of four rated them as fair, and four of ten rated them as poor.

Employment Variations

One-half of the employers indicated certain months of maximum and minimum employment. Twenty per cent indicated that December was the month of maximum employment, and July was the month of maximum employment for 12.4 per cent of the employers. The months of lowest employment were February and January for 17.1 per cent and 12.6 per cent, respectively. Seasonal influences accounted for all the variations in employment for 25 per cent of the employers, while 57 per cent indicated there were no seasonal variations in their employment force. Replacement of employees on an annual basis due to severance, disability, retirement, or death was not a factor for more than one-half of the employers, while 25 per cent indicated that from one to ten per cent of their employee force was affected, and 20 per cent indicated that from 11 to 50 per cent of their employee force was affected annually.

Education for Employment

Secondary vocational education offerings are being expanded. By far the largest proportion of these courses are related to the farm or home. Specific training for gainful employment in non-farm occupations still reaches only 20 per cent of the high school population at the present time. There are approximately 500 students in regular terminal training programs and 300 in programs for the disadvantaged and handicapped.

The general educational background and/or training needed to provide employers with better workers was grouped by businesses into the major vocational areas. Collec-

tively, 63 per cent of the employers indicated that a high school education was necessary for employment, 17 per cent indicated junior college or some college, and nine per cent indicated a college degree. A vocational-technical background was considered essential by 17 per cent of employers in agriculturally related businesses, 23 per cent in distributive, 17 per cent in health, plus 13 per cent specifying medical training, and 34 per cent in industrially oriented businesses.

The training needed for specific occupations was indicated by the employers. On-the-job training was indicated for 32 per cent of the occupations, apprentice training for 12.2 per cent, and formal company training programs for 6.5 per cent. Training associated with high school programs was indicated for 17.7 per cent of the occupations, and post-secondary training for 32.1 per cent in vocational-technical institutes, commercial schools, and junior colleges.

The major personal weaknesses of employees were listed by employers. The three weaknesses most frequently mentioned were "lack of training," "unwilling to work," and "lack of ambition." These accounted for one-half the responses, the balance of responses included deficiencies in interest, confidence, responsibility, loyalty, pride, and others.

Somewhat less than half of the students (40%) work at part-time jobs while attending school, while twice that many work during the summer. Considerably fewer girls than boys work during their school age years.

Fewer of the present high school students were enrolled in college preparatory programs than were the out-of-school youth when they were in high school, while

more high school students were enrolled in a general curriculum than were the former students. Only 18 per cent of the high school students were engaged in vocational programs, two per cent more than the former students. The percentage of students in the smaller schools enrolled in vocational programs is significantly lower than the average for the five counties.

The out-of-school youth, based on their post-high school experience, rated their high school experience as most valuable in learning how to relate to other people, while rating preparation for the world of work and specific job preparation as the least valuable.

A large majority of high school students were participants in a variety of extra-curricular activities. Only 15 per cent were not active in this area. The counseling service provided by the schools was rated by the students as slightly better than the degree of access to occupational information, while the opinion that these services were inadequate were given by only 13.5 and 12.5 per cent, respectively.

Attitudes Regarding Education

Parental attitudes regarding college attendance are revealed among three groups involved in the study. Former students revealed that 95 per cent of their parents were willing or insisted that they attend college. Among the high school students, 89 per cent of mothers and 85 per cent of fathers are willing or insist that their children should attend college. Parents were asked to reveal their desires and expectations for their children regarding college attendance. Seventy-eight per cent desired that their children attend college, while only 65 per cent expected them to attend. Further analysis

reveals that 57 per cent of the parents surveyed desired that their children graduate from a four year college or university, while only 40 per cent expected them to do so. The percentage of parents who desired that their children acquire education at a two year college or vocational-technical school was 21 per cent, while the percentage who expected them to do so increased to 27 per cent. By comparison, 26 per cent of the high school students expect to attend a junior college.

Parental influence on former students' and present students' educational choices was greater than other individuals, in each group accounting for approximately one-half of the external influence. Among former students, 62 per cent reported that the school counselor had no influence on their educational choices, and only 12 per cent reported that the counselor had much influence. Among high school students, only 12 per cent reported that the school had the greatest influence on their educational choices.

As with parents attitudes regarding their children, the desired goal of educational attainment among high school students is greater than their expectation. The percentage who expect to graduate from college decreases by five and one-half from the desired goal. The expected educational attainment of the high school students is the same as the actual educational attainment of the former students. Sixty-three per cent of the high school students expect to acquire post-secondary education while 64 per cent of the former students have attended college, junior college or a trade or technical school. This compares with the 65 per cent of parents who expect their children to attend college.

Occupational Choices and Employment

Parents were more influential than others in the occupational choices of high school

students though to a lesser degree than in the educational choices of the students. Though parents have influence in occupational choices, most students do not plan to enter the same occupation as their fathers. The influence of a person established in the occupation increased from 12 per cent among ninth graders to 17 per cent among twelfth graders, and to 33.6 per cent among the former students. Parents were influential in the occupational choices of the former students but not as much as a person in the occupation.

Occupational choices were made by 68 per cent of all high school students, the range from ninth graders to twelfth graders being 59.7 per cent to 75.7 per cent respectively. At each grade level, approximately seven per cent more students reported that their occupational choice was made prior to their present grade.

The greater number of students, 41 per cent, indicated that the primary reason why they might not enter their desired occupation could be attributed to a change of interest while 13.4 per cent indicated that the educational or training demands of their desired occupation may prevent them.

Among the former students, 73 per cent are employed full-time or part-time. Sixty-five per cent of these indicated that they are not employed in the occupation they expected to be employed when leaving high school, while 65 per cent also indicated they are not employed in the occupation for which they trained or are training at the post-secondary level. By comparison with the high school group, only eight per cent of the former students reporting indicated they were not training for a job because of lack of interest, while 41 per cent of high school students thought that interest change might prevent them

from entering their desired occupation. Over 13 per cent of high school students thought that they might not enter their desired occupation because the education and training demands were too difficult, while none of the former students felt they were too difficult. Twenty-one per cent of the former students had completed the preparation necessary for their occupation, while 21 per cent indicated that economic reasons prevented them from continuing their training or education.

The present jobs of former students were acquired through a variety of methods. Forty-seven per cent applied directly to the employer, while 37 per cent received the assistance of a relative or friend. Nine per cent used the services of a private employment agency, and the balance through a variety of agencies. Sixty-six per cent of the former students had decided what type work they would like to be doing at the end of five years. These desired occupations were classified into eight categories and tallied - 27 in Agriculture, 12 in Distributive, 21 in Health, 10 in Home Economics, 19 in Industrial, 36 in Office, 17 in Technical, and 85 in Academic or Professional fields.

Migration Patterns

When asked about their post-high school plans, approximately three-fourths of the high school students indicated they planned to leave the area. Thirty-eight per cent planned to attend college, while 25 per cent felt that there are better jobs and more opportunity elsewhere. One-third planned to move for a variety of personal reasons, such as with their family, to enter the military, etc. When given the opportunity to state where they would prefer to live and work when their educational goals were reached, 27 per cent indicated they would prefer to live in their home area, 40 per cent in other

areas of Texas and 30 per cent outside the state.

A comparison of the migration plans of the high school students and former students, and actual migration of the former students since leaving high school reveals that in both groups three out of four plan to or did move from the area. A number of the former students have returned and now 47 per cent reside in their home county, 43 per cent live in other areas of Texas and only ten per cent out of the state. Thirty-eight per cent of the high school students planned to attend a school or college, while among former students, 52 per cent of their moves were for school or college purposes; better opportunity and job purposes are reasons for 25 per cent of the high school students to move, while 42 per cent of the former students did move for job purposes, either for themselves or their spouses, and one-third of high school students projected other reasons for moving while only six per cent of former students did move for other reasons.

Assuming their education completed and a job available in each case, 37 per cent of the high school students and 35 per cent of the former students would rather live in their home or surrounding counties; 40 per cent of high school students and 46 per cent of former students would prefer to live in other areas of Texas while 30 per cent of high school students and 18 per cent of former students would prefer to live outside of Texas.

Junior College Need and Support

Over half of the out-of-school youth group said that occupational and technical education at the junior college level was needed in their home area. Seventy-six

per cent of the parents felt that a junior college, including occupational and tech- co- training, would be valuable, 79 per cent felt that a junior college is needed in this area, and 70 per cent would be willing to support a junior college. Forty-one per cent of the employer group were interested in additional training for their work force in a local junior college, 25 per cent were not interested and 34 per cent were undecided. Seventy-nine per cent of the employer group felt that vocational-technical training at the junior college level would be valuable to the community and 13 per cent thought it would have "some" value. Seventy-eight per cent of the employers felt that a junior college is needed in the area, 73 per cent indicated that they would support such a college, and 83 per cent of the employers would accept qualified graduates of vocational-technical schools or classes for skilled positions.

The parents were given a question regarding commuting for the purpose of attending an adult evening class for themselves. Thirty-four per cent were willing to commute locally, 35 per cent up to 14 miles one way, 19 per cent up to 29 miles one way, and only 11 per cent were willing to drive farther. The parents were willing for their children to drive father for the purpose of attending a vocational or technical school. Thirteen per cent were willing for their children to commute locally, 24 per cent up to 14 miles one way, 38 per cent up to 29 miles, 14 per cent up to 49 miles, and 12 per cent more than 50 miles.

The high school students were asked the question whether they would attend a junior college offering vocational and technical education if it met their needs and were within daily driving distance. Forty-nine per cent or 1,794 answered yes, only 16 per cent answered no, and 27 per cent were uncertain. Among those who answered affirmatively

there were 483 ninth graders, 477 tenth graders, 460 eleventh graders, and 374 twelfth graders. The former students were asked if they would have attended a junior college offering the programs they desired and was within commuting distance. Forty-seven per cent, or 149 respondents in this group answered yes, while 53 per cent, or 169 answered no. Among parents, 82 per cent, or 622, were willing to send their children to learn a trade or vocation at a vocational-technical training school or the junior college level if it were within commuting distance.

A variety of ways they would support a junior college were expressed by the parent group and employer group. Among the parents, the primary support would be enrollment of themselves or their children, "anyway possible" the next most expressed way, followed by donations and taxes, while a scattering of other ways expressed. Among the employers, the most often expressed ways of support were "anyway possible", hiring students, "moral" support, and financially, including taxes. Several offered on-the-job training stations.

Reasons for non-support were also expressed by some parents and employers. The most often expressed reason among parents was that they were not financially able. One fourth of them felt that college was already available, and several were undecided why they would not support a junior college. Similar reasons were expressed by the employers. Several employers thought that a college education is not needed.

The high school students were asked how they planned to finance their education beyond high school and their entry into an occupation. Slightly more than one-third will use parental aid in each case. Forty-three per cent will work to finance their

education, and 31 per cent will work on another job to finance entry into their desired occupation. Ten per cent or less will borrow money for either purpose.

Conclusions

Data from the study seem to warrant the following conclusions:

1. There is a need for expanding occupational training opportunities in the five counties. Employers express concern over the availability of trained workers for replacement and expansion needs. The potential labor supply from students, out-of-school youth, and adults have expressed a desire for such training for occupational entry and for upgrading their skills.

2. The attitudes of employers, parents, out-of-school youth, and students and the aspirations of these groups for occupational training indicate a relatively high level of moral support and desire for post-high school education.

3. Occupational training programs at the secondary level are being initiated and expanded. Existing vocational programs are being redirected into gainful employment training opportunities. Post-secondary occupational training programs in the five-county area exist in only three specialized fields: licensed vocational nursing, court reporting, and secretarial. Such efforts are commendable. These programs are still inadequate to meet the needs of employers for the variety of trained workers they employ, the needs of students who desire training, the needs of youth who desire to migrate, and the needs of adults who desire to upgrade their skills or retrain for new occupations.

4. Students in smaller high schools are denied the opportunity for occupational training to develop salable skills and orientation to the world of work. They enter the labor market untrained or must of necessity acquire training at a distant location on a resident basis. Post-secondary training programs within commuting distance would provide them the opportunity to acquire salable skills at lower costs to them or their parents.

5. There is a lack of understanding on the part of some people of the difference between a four year college and a public junior or community college.

6. Data from out-of-school youth indicate that they did not receive all the help they needed from their high schools to become occupationally competent at graduation.

7. The increasing number of high school students enrolled in general curricula indicate a need to direct their education toward the achievement of occupational competence. Expansion of vocational offerings at the secondary and post-secondary level will alleviate this need.

8. There is a definite need for articulation between employers regarding their needs for trained workers and the institutions providing training to meet those needs. This is evident when two-thirds of the former students are not in jobs they expected to be when they left high school or have trained or are training for at the post-secondary level. The true situation is somewhat different since many are still

going to school or in training.

9. Employers indicate the need for trained workers for replacement and expansion in many of the occupations they utilize in all categories, but the greatest need exists in health, technical, and industrial occupations. A shortage of trained workers also exists in agriculturally related occupations.

10. There is a need for school guidance and counseling services to provide a more comprehensive base from which students can make more realistic educational and occupational decisions.

Recommendations

The purpose of this research effort was to provide a data base for conclusions and recommendations appropriate to improvements in the education and training of students and adults to meet the occupational needs of the area.

1. Career education is emerging as a pervasive concept in the educational system of America. The concept involves schools in the acceptance of the responsibility for providing their students with the capacity "to live" and "to make a living." Based on the findings and conclusions of this five-county area study, it is recommended that secondary occupational programs be broadened and existing programs be redirected toward providing occupational competence or the background to succeed in further academic or occupational education according to the student's desires and abilities. It is further recommended that post-secondary occupational and technical education programs be initiated. A broad based program for all students would provide the following:

A. Post-secondary programs

a. Occupational and technical education for job entry at 13th and 14th year level.

b. Job entry training for school drop-outs.

c. Adult retraining for job entry or training to upgrade skills for advancement in present occupations.

B. Secondary school programs

a. Specific occupational training for job entry at graduation for 11th and 12th grades.

b. Advanced exploratory courses for students who want to prepare for post-secondary occupational and technical education for 11th and 12th grades.

c. Exploratory courses in the 9th and 10th grades to enable a student to make a more realistic determination of his future goals in the world of work.

d. Orientation courses in grades 7 and 8 to acquaint the student with the world of work.

2. It is recommended that an advisory committee composed of school and community leadership from each county and/or school district within the five-county area be created to examine the options and alternatives regarding occupational and technical education in the area. The committee would consider:

(a) occupational and technical education programs to meet the occupational needs of the area

(b) priorities for programs needed

(c) plans for the implementation of programs needed

(d) resources available for occupational and technical education

(e) promotional programs to increase the awareness of educators, businessmen, professionals and the general public relative to the need for expanded programs of occupational and technical education

(f) the need for articulation between secondary and post-secondary programs of occupational and technical education

(g) involvement of state agencies for consultative purposes and appropriate action

3. It is recommended that all high schools make a concerted effort to improve guidance and counseling services in the area of occupational orientation and guidance leading to occupational competence according to the students' desires and abilities. Students need to have organized and realistic information about the world of work and what it offers to youth if they are to make solid decisions. Schools should give primary concern to the development of occupational objectives by all students, including those who aspire to a college degree and a professional career.

4. Students from smaller schools who are denied the opportunity to gain salable skills at the high school level can benefit from post-secondary programs. It is recom-

mended that their needs be determined and considered in future action.

5. It is recommended that the Texas Tech University School of Medicine be consulted relative to planning and implementing cooperative programs in the field of health occupations.

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APPENDIX

A. Survey Forms

B. High School Student Data Tables

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APPENDIX A

SURVEY FORMS

1. Manpower and Training Needs Survey
2. High School Student Survey
3. Follow- Up Survey
4. Parent Survey

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1. MANPOWER AND TRAINING NEEDS SURVEY

CONFIDENTIAL

This survey form is designed to gather information concerning present and future manpower needs in your area. The information you supply will provide a basis from which recommendations can be made concerning areas of training which will serve you better. All individual information will be held in strictest confidence and no organizations will be listed in the final report.

DIRECTIONS: On the answer sheet provided, please place the letter of the appropriate answer in the blank that corresponds to the question number.

1. Have you had employees on the payroll within the past year?
   A. Yes B. No

2. Do you expect to employ anyone within the next five years?
   A. Yes B. No

If you answer Yes to either of the questions, please complete the remainder of the form. If the answers to the first two questions are No, you may stop at this point, or if you wish, respond to the questions you feel are applicable.

3. In filling job openings, which of the following statements apply?
   A. No problem
   B. Trained workers are available
   C. Shortage of trained workers exists
   D. Quality workers are hard to find
   E. Other

4. What minimum educational requirements do you have for entry employees?
   A. Elementary education
   B. High school education
   C. Two years of college
   D. College degree
   E. Advanced degree

5. Is there a specific training program for employees in your company or organization?
   A. Yes B. No

6. Would you accept qualified graduates from vocational-technical schools or classes without actual work experience to fill vacancies in skilled positions?
   A. Yes B. No

7. Do you now, or would you pay the tuition of employees who take training to improve their job skills?
   A. Yes, in full B. Yes, in part C. No

8 Do you inform your employees of educational opportunities they might take to improve their job skills?

A. Yes B. No

9. Have the high schools adequately prepared their graduates for entry into employment with your firm?

A. Yes, adequately
B. Yes, but only partially
C. No
D. Do not know

10. Have the employees of your firm who have attended a junior (community) college, been adequately prepared for their occupations?

A. Yes, adequately
B. Yes, but only partially
C. No
D. Do not know

11. Do you feel, in general, non-high school graduates:

A. Perform satisfactorily in their jobs?
B. Perform satisfactorily but require a great deal of additional training?
C. Perform unsatisfactorily?

12. Do you feel, in general, high school graduates are:

A. Practically unemployable because of a lack of training?
B. Employable but only in unskilled jobs?
C. Employable but require a considerable amount of additional education and training?
D. Reasonably well prepared for entry employment and adjust quickly?

13. To what extent do existing educational facilities in the surrounding areas (Briscoe, Floyd, Hale, Motley, and Swisher counties) meet off-the-job training needs for your employees?

A. Excellent B. Fair C. Poor D. Do not know

14. To what extent do existing educational facilities in the surrounding area (Briscoe, Floyd, Hale, Motley, and Swisher counties) meet the occupational and training needs of your company or firm?

A. Excellent B. Fair C. Poor D. Do not know

15. Would your firm be interested in additional training for your present work force during their non-working hours in a local junior college?

A. Yes B. No C. Undecided

16 Do you feel that a junior college, including vocational-technical training is valuable to the community?

A. Valuable
B. Of some value
C. Undecided
D. Little value
E. No value

17 Do you feel that a junior college is needed in this area?

A. Yes B. No

18. Would you be willing to support a junior college?

A. Yes B. No

IMPORTANT. Enclosed with this questionnaire is a description of the various classifications of employees accompanied by a list of examples for each classification. Please consider these definitions and job examples in answering the following questions.

Please indicate the number of unskilled employees:

19. You had March 1, 1972
20. You expect to have March 1, 1973
21. You expect to have March 1, 1977

Please indicate the number of semi-skilled employees:

22. You had March 1, 1972
23. You expect to have March 1, 1973
24. You expect to have March 1, 1977

Please indicate the number of skilled employees:

25. You had March 1, 1972
26. You expect to have March 1, 1973
27. You expect to have March 1, 1977

Please indicate the number of clerical and sales employees:

28. You had March 1, 1972
29. You expect to have March 1, 1973
30. You expect to have March 1, 1977

Please indicate the number of semi-professional and technical employees:

31. You had March 1, 1972
32. You expect to have March 1, 1973
33. You expect to have March 1, 1977

Please indicate the number of managerial employees:

34. You had March 1, 1972
35. You expect to have March 1, 1973
36. You expect to have March 1, 1977

Some employment fluctuation is due to seasonal trends. For example, stores employ additional help during Christmas season and cotton gins employ more people during the harvesting season.

Indicate the largest number of people on your payroll at one time between March 1971 and March 1972. _____

In what month did this occur? _____

Indicate the smallest number of people on your payroll at one time between March 1971 and March 1972. _____

In what month did this occur? _____

What per cent of this is due to seasonal variation rather than a general increase or decrease in business? _____%

What per cent of your total employee force is replaced annually due to severance, disability, retirement or death? _____%

Please indicate the type of business you operate and briefly describe the major functions.

_____

_____

Please list below the general educational background and/or training needed to provide better quality workers in your business.

_____

_____

Please make a brief statement as to what you feel are the major personal weaknesses of prospective employees.

_____

_____

In what ways would you support a junior college? Or, if you would not support a junior college -- Why?

_____

_____

You are urged to express any further views or ideas you may have on the back of this page.

RETURN ONLY THIS SHEET AND THE FORM LISTING THE OCCUPATIONS IN YOUR FIRM.

OVER

	ANSWER SHEET
16. ____	1. ____
17. ____	2. ____
18. ____	3. ____
19. ____	4. ____
20. ____	5. ____
21. ____	6. ____
22. ____	7. ____
23. ____	8. ____
24. ____	9. ____
25. ____	10. ____
26. ____	11. ____
27. ____	12. ____
28. ____	13. ____
29. ____	14. ____
30. ____	15. ____
31. ____	
32. ____	
33. ____	
34. ____	
35. ____	
36. ____	

CONFIDENTIAL

Code Number

_____

List the types of semi-skilled, skilled, clerical, semi-professional, and managerial occupations in your firm	Minimum years of education necessary for job entry	The training necessary to function properly on the job should be acquired							Number now employed	Total number you expect to employ by 1977	Indicate with an O if presently there is an oversupply, or an S if the supply is short
		On the Job	By formal Company Programs	Through Apprenticeship Programs	In Junior College	In a Commercial School	In a Technical Institute	In High School			
ex. Secretary	12	✓				✓		✓	4	6	O
ex. Mechanic	12	✓		✓			✓	✓	3	7	S

2252

The unskilled employee performs labor involving simple tasks learned within a short time and requires little or no decision making or thinking. This occupation requires no previous experience and varies in the amount of physical exertion.
Some examples of unskilled occupations are:

Bag filler or sealer
Batch mixer-helper (grain mill)
Bottle caser
Bottling line attendant
Bundle packer, tier, wrapper
Busboy
Cleaning woman
Custodian
Dockman
Domestic worker
Gin hand
Helper (any kind)
Hide marker (leather industry)
Laborer (any industry)
Lumber stacker (lumberyard)
Operator of simple machinery
Roughneck
Routeman
Sorter
Street cleaner
Sweeper
Trash collector
Trimmer
Washer
Wiper

The semi-skilled employee generally works with his hands as a machine operator, helper, or assistant to a skilled worker. He usually receives brief on-the-job training. Ability to adapt to new situations is perhaps more important than the level of education.
Some examples of sem-skilled occupations are:

Apprentice
Assistant to skilled worker
Attendant (filling station and parking lot)
Batch mixer (grain and feed mill)
Blender (bake products)
Box car loader
Brick-molding machine operator
Can, bottle, jar, and barrel filler machine operator
Candy-maker helper
Chairman, rodman, and ax-man, surveying
Capper operator
Chair trimmer (furn. mfg.)
Combination sander (planing mill)
Core-oven operator (foundry)
Electrician helper
Excavating and grading equipment operator
Eyeglass cutter (optical goods)
Furniture assembler
Gas plant operator
Greaser (auto service)
Ham facer
Homogenizier operator (dairy prod.)
Kiln burner (brick and tile)
Lathe operator (machine shop)
Linterman (cottonseed production)
Mechanics helper
Mix-man helper (ice cream)
Plate former (electrical equip.)
Presser (laundry and cleaners)
Printing press operator
Punch press operator (paper goods)
Press operator (compressed and liquefied gas)
Radio technician helper (radio manufacturing)
Rubber compounder (rubber goods)
Shoe repairman helper
Soft drink powder mixer
Stenciler (garment)
Tool dresser
Trimmer, machine (leather products)
Turret-lathe operator, automatic (machine shop)

The skilled employee, who normally requires extensive training, transforms ideas and plans of the professional into products and services. He is employed in all phases of industry, being responsible to know all the processes involved in the job. He must be both physically and mentally capable as well as responsible for equipment and products.
Some examples of skilled occupations are:

Baker
Bleacher, chlorine-hyperchlorite system (paper and pulp)
Boilermaker
Brakeman (railroad)
Bricklayer
Cabinetmaker
Cobbler
Compositor and typesetter
Coremaker
Cracking-unit operator (plastic material)
Dressmaker and seamstress
Dry cleaner
Electrician
Engraver
Ginner
Glass bender
Glazier
Jeweler
Lineman
Liquefaction-plant operator (composed and liquefied gases)
Lithographer
Locomotive engineer
Lumberman, raftsman, woodchopper
Machinist
Meatcutter (retail and wholesale)
Mechanic
Miller, grain flour, feed, etc.
Molder (foundry)
Motion picture projectionist
Operator, heavy equipment
Ornamental-iron worker
Painter
Paperhanger
Patternmaker
Plasterer
Plater (electroplating)
Plumber
Practical nurse
Pressman and plate printer, printing
Purification operator (chemical)
Repairman
Roofer
Rotary driller (petroleum prod.)
Sheet metal worker
Shoe repairman
Steam fitter
Stillman (gas plant)
Tailor and tailoress
Tanner (leather manufacturing)
Tinter (paint and varnish)
Tirebuilder, core (rubber tire and tube)
Treater (petroleum refinery)
Toolmaker
Upholsterer
Watchmaker and watch repairman
Weaver, textile
Welder
Well puller (petroleum prod.)

The clerical employee is to prepare, transcribe, transfer, systemize, or preserve the written communications and records of an office, shop, or business. This individual must perform processes that are both mental and manual, while many positions require the operation of various office machines.

The sales employee concerns himself with the selling of commodities, investments, real estate, and services. Some of these occupations however do not include actual selling but involve direct customer or prospective customer contact for the sake of promotion or goodwill.
Some examples of clerical and sales occupations are:

Bookkeeper and cashier (except bank cashier)
Canvasser and solicitor
Checker
Clerk, general and office
Demonstrator
Dental assistant or attendant
Huckster or peddler
Library assistant and attendant
Mail carrier
Medical assistant or attendant
Messenger, errand boy and office boy or girl
Newsboy
Office machine operator
Paymaster, payroll clerk and timekeeper
Postal clerk
Sales clerk
Salesperson
Salesman, to consumer
Secretary
Stenographer or typist
Telegraph and telephone operator
Ticket, station and express agent, transportation
Weigher

The semi-professional and technical employee requires extensive training and/or practical experience to deal with the theoretical or practical aspects in fields of endeavor. The semi-professional and technical employee applies established techniques and methods toward the practical solutions to problems encountered rather than dealing with the formulation of the complicated aspects of the technical field which are considered as "professional". This occupation requires formal training, experience or a combination of both.
Some examples of semi-professional and technical occupations are:

Aviator
Chemical technician
Commercial artist
Dancer
Decorator and window dresser
Designer
Draftsman
Electronics technician
Embalmer
Engineering assistant
Foreman
Laboratory technician
Materials technician
Licensed Vocational Nurse
Medical service occupations not elsewhere classified
Photographer
Physical therapist
Physics technician
Production planner
Radio operator
Showman
Sports instructor
Sports official
Surveyor
Systems technician
Teachers aide
Technical artist
Tool designer
X-ray technician

The managerial employee is required to engage in a high degree of mental activity and works with the theorectical or practical aspects of complex fields of human endeavor. This type of employee is normally required to have extensive or comprehensive academic background or experience of such scope and nature as to provide sufficient knowledge to work effectively in the position.
Some examples of the managerial occupations are:

Advertising agent
Editor, and reporter
Buyer and department head, stores
County agent and farm demonstrator
Floor manager, store
Hotel and restaurant manager
Inspector, managerial and official
Manager or superintendent, building
Manager, business, industry, or institution
Official of lodge, society, union, etc.
President of business, industry, or institution
Public official not elsewhere classified
Purchasing agent or buyer
Social or welfare worker
Trained nurse

2. HIGH SCHOOL STUDENT SURVEY

1. Who are you living with now?
   - A. Both parents
   - B. A parent and a step-parent
   - C. One parent only
   - D. Spouse
   - E. Other

2. How many of your brothers and sisters have gone to college (including those who are now in college)?
   - A. None
   - B. One
   - C. Two
   - D. Three
   - E. Four or more

3. To which ethnic group do you belong?
   - A. Anglo
   - B. Black
   - C. Mexican American
   - D. Other

4. How much education has your Father completed?
   - A. Less than high school
   - B. Completed high school
   - C. Vocational school, business school, or some college
   - D. College degree (B.S., M.S., Ph. D., or Professional degree)
   - E. Uncertain

5. How much education has your Mother completed?
   - A. Less than high school
   - B. Completed high school
   - C. Vocational school, business school, or some college
   - D. College degree (B.S., M.S., Ph. D., or Professional degree)
   - E. Uncertain

6. Would you like to enter the same type of occupation as your Father?
   - A. Very much (Fully intend to do so)
   - B. Probably will
   - C. Undecided
   - D. Not at all

OVER

7. What is the average of your high school grades?
   A. A
   B. B
   C. C
   D. D
   E. E or F

8. Do you earn money while attending high school by working on a part-time job?
   A. Yes
   B. No

9. Do you work during the summer?
   A. Yes
   B. No

10. What are most of your friends doing at the present time?
   A. Attending high school
   B. Quit school
   C. Graduated from high school

11. What is your best friend doing at the present time?
   A. Attending high school
   B. Quit school
   C. Graduated from high school
   D. Attending a business school, vocational school, or college
   E. Serving in the armed forces

12. In how many extracurricular activities have you participated?
   A. None
   B. One
   C. Two
   D. Three
   E. Four or more

13. What course of study are you following in high school?
   A. College preparatory
   B. Commercial
   C. General education (No specific area)
   D. Vocational-trade-technical

14. According to your experience, what is the degree of access to occupational information in your school?
   A. Excellent
   B. Satisfactory
   C. Inadequate

OVER

15. According to your experience, what is the degree of availability of the counseling service in your school?
    A. Excellent
    B. Satisfactory
    C. Inadequate

16. When leaving high school (graduate or drop-out), do you plan to move from the area?
    A. Yes
    B. No

(17 & 18) If the answer to the previous question is Yes, which of the following reasons best describes why? (Choose ONLY ONE of the nine responses)

17. A. To see other places
    B. No jobs at all in this area
    C. More opportunity elsewhere
    D. No jobs that pay well
    E. Family plans to move

18. A. To attend college in another city
    B. To get away for personal reasons
    C. To enter the armed service
    D. Other

19. How much education do you desire?
    A. Drop out of school before graduating
    B. Complete high school only
    C. Attend vocational school, business school, or junior college
    D. Graduate from a college or university
    E. Uncertain

20. Considering your abilities, grades, financial resources, etc., how much education do you really expect to complete?
    A. Drop out of school before graduating
    B. Complete high school only
    C. Attend vocational school, business school, or junior college
    D. Graduate from a college or university
    E. Uncertain

21. What would be the main reason why you may not reach your desired educational goal?
    A. Interest change
    B. Ability
    C. Lack of encouragement
    D. Finances
    E. Other

OVER

22. What will be the primary source of financing your education if you continue beyond high school?
    A. Parents
    B. Scholarships
    C. Working
    D. Borrowing
    E. Other

23 Provided nothing prevents you from achieving your educational goals, and assuming a job was available, where would you prefer to live and work?
    A. Home county
    B. Surrounding counties
    C. State of Texas in general
    D. Elsewhere

24. How does your Mother feel about your attending college?
    A. Insists or expects me to go
    B. Wants me to go if I want to
    C. Doesn't care one way or the other
    D. Doesn't want me to go
    E. Won't allow me to go

25. How does your Father feel about your attending college?
    A. Insists or expects me to go
    B. Wants me to go if I want to
    C. Doesn't care one way or the other
    D. Doesn't want me to go
    E. Won't allow me to go

(26 & 27.) Who do you feel has had the greatest influence upon your <u>educational</u> desires? (Choose <u>ONLY ONE</u> of the following eight responses)

26. A. Father
    B. Mother
    C. Brother or sister
    D. Other relative
    E. Best friend

27. A. School or faculty member
    B. I am not certain of my educational aspirations
    C. Other

28. Would you attend a junior college, which included occupational and technical education, if it met your needs and were within daily driving distance?
    A. Yes
    B. No
    C. Uncertain

OVER

ATTENTION In the margin at the upper right hand corner of the answer sheet, please print the name of the occupation you have chosen or the occupation you feel is the one you would like to enter.

29. When did you make your occupational choice?
   A. Before ninth grade
   B. In ninth or tenth grade
   C. In eleventh grade
   D. In twelfth grade
   E. Have not yet decided

30 What will be the primary source of financial aid to enable you to enter your desired occupation, if required?
   A. No help will be needed
   B. Parents
   C. Lending agencies
   D. Working on another job
   E. Other

31. What would be the primary reason why you may not enter the occupation you desire?
   A. None
   B. Physical handicaps
   C. Educational or training demands
   D. Change of interest
   E. Other

(32 & 33.) Who do you feel has had the greatest influence upon your choice of career? (Choose ONLY ONE of the following nine responses)

32. A. Father
   B. Mother
   C. Brother or sister
   D. Other relative
   E. Best friend

33. A. School or faculty member
   B. A person in the occupation
   C. I have not decided on a career
   D. Other

3. FOLLOW-UP SURVEY

1. Male_____ Female_____

2. Marital status:
   Single_____, Married_____, Divorced_____, Widowed_____, Separated_____

3. Ethnic group Anglo_____, Black_____, Mexican American_____, Other_____

4. Which course or curriculum best describes the one which you took in high school?
   _____College or university preparatory
   _____Business or commercial education
   _____Vocation-trade-technical
   _____General (No specific area)

5. In terms of your experience since leaving high school (graduation or otherwise), the preparation you received in each of the following areas by the high school was:

	Valuable	Some Value	Little Value	No Value
English	_____	_____	_____	_____
Mathematics	_____	_____	_____	_____
Science	_____	_____	_____	_____
Social Studies	_____	_____	_____	_____
Specific job preparation	_____	_____	_____	_____
World of work	_____	_____	_____	_____
Getting along with people	_____	_____	_____	_____

6. To what extent did each of the following people influence your educational choices?

	None	Some	Much
Teacher	_____	_____	_____
School Counselor	_____	_____	_____
Father	_____	_____	_____
Mother	_____	_____	_____
Best friend	_____	_____	_____
Other (Specify)			
_____	_____	_____	_____

7. When you finished high school, would you have attended a junior college within commuting distance which offered the programs you desired?
   _____Yes
   _____No

OVER

8. How did your parents feel about your going to college?

_____ Insisted I go
_____ Wanted me to go if I wanted to go
_____ Didn't care one way or the other
_____ Did not want me to go
_____ Wouldn't let me go

9. How many years after leaving high school (graduation or otherwise) did you live in your home county before leaving?

_____ Haven't left, have continued to live in home county
_____ Less than a year
_____ Over one year and less than two
_____ Over two years

10. Present address: City _____ State _____

11. If you moved once or more since leaving high school, please indicate significant moves by giving City and State and the reason for the move:

1. From _____ To _____
   Reason _____ Position _____

2. From _____ To _____
   Reason _____ Position _____

3. From _____ To _____
   Reason _____ Position _____

12. Based on your experiences and observations, how do you feel about job training opportunities in the area where you attended high school?

_____ High school programs are adequate for most
_____ Existing training programs beyond high school are adequate (on-the-job, commercial colleges, etc.)
_____ Occupational and technical training at the junior college level is needed
_____ Do not know

13. Provided nothing prevents you from achieving your educational goals, and assuming a job in your desired occupational field was available, would you prefer to live and work in:

_____ Your home county
_____ The surrounding counties
_____ The state of Texas in general
_____ Elsewhere

14. To what extent did each of the following people influence your occupational choices?

	None	Some	Much
Teacher	_____	_____	_____
School Counselor	_____	_____	_____
Father	_____	_____	_____
Mother	_____	_____	_____
Best friend	_____	_____	_____
Employment Counselor	_____	_____	_____
Person in occupation	_____	_____	_____
Other (Specify)			
_____	_____	_____	_____

15. Types of programs under which you have trained, or are training, since leaving high school (more than one, if applicable)

_____ Trade or technical school
_____ Business school
_____ Junior college
_____ College or university
_____ Evening adult classes
_____ Armed forces school
_____ Apprenticeship
_____ Vocational Rehabilitation
_____ Federal M.D.T.A.
_____ Federal Office of Economic Opportunity
_____ Correspondence school
_____ Other (Specify)_____
_____ None

16. For what specific occupation did you train or are you training (for example: auto mechanic, teacher, secretary, etc.)?

_____

17. If you are not training or going to school at the present time, which of the following is the reason of most importance?

_____ Have completed all the preparation necessary for my occupation
_____ Economic reasons made it impossible to continue
_____ Not interested
_____ It was too difficult
_____ Family responsibilities prevent it
_____ Other_____

18. What is your present employment status?

_____ Employed full time
_____ Employed part time
_____ Not employed

19. Are you employed in the occupation in which you expected to be employed when leaving high school?
_____ Yes
_____ No
_____ Does not apply

20. Are you employed in the occupation for which you trained or are training at the post-secondary level?
_____ Yes
_____ No
_____ Does not apply

21. If employed, what is your job title?_____

22. What do you do in this job?_____

23. How did you get this job?
_____ Through a union
_____ Through a relative
_____ Through a friend
_____ Through a school counselor
_____ Through a State Employment Service
_____ Through Civil Service
_____ Through a private placement agency
_____ By answering an advertisement
_____ By applying directly to a person or company that might be hiring

24. Have you decided what type of work you would like to be doing five years from now?
_____ Yes
_____ No

25. If your answer to question #24 was Yes, name the type of work you would like to be doing. (Be specific)_____

26. What is the highest level of formal education you have completed?
_____ Ninth grade
_____ Tenth grade
_____ Eleventh grade
_____ High school graduate
_____ One or two years of technical school
_____ One through three years of college
_____ College graduate

You are urged to express any further views or ideas you may have on the back of the page.

ONCE AGAIN---THANK YOU

4 PARENT SURVEY

CONFIDENTIAL

DIRECTIONS. On the answer sheet provided, please place the letter of the appropriate answer in the blank that corresponds to the question number.

1. Age of respondent
   - A. 29 or below
   - B. 30 - 34
   - C. 35 - 39
   - D. 40 - 44
   - E. 45 - 49
   - F. 50 or above

2. Marital status
   - A. Married
   - B. Separated
   - C. Divorced
   - D. Widowed

3. To which ethnic group do you belong?
   - A. Anglo
   - B. Black
   - C. Mexican American
   - D. Other

4. Education completed
   - A. 1 - 8 years
   - B. 9 - 11 years
   - C. High school graduate
   - D. 1 - 3 years of college
   - E. College graduate

5. Working status
   - A. Full time employee
   - B. Part time employee
   - C. Self employed
   - D. Homemaker
   - E. Retired
   - F. Unemployed

6. Length of time at present employment
   - A. 1 - 2 years
   - B. 3 - 5 years
   - C. 6 years or more
   - D. Does not apply

OVER

7 Does your employer:
- A Have an informal or on-the-job training program?
- B Have a formal company training program?
- C Keep any records of training employees acquire on their own time?
- D Give financial or promotional consideration to employees who take additional training?

8 Have you thought recently that you might like to enroll in some type of adult education course?
- A Yes
- B No

9 If the answer to the previous question was Yes, what type of courses would you like to take, if they were available?

10 Suppose you decided to enroll in some sort of adult education program that was readily available In which of the following ways would the courses you choose be helpful to you?
- A To improve myself in my present job
- B To prepare for a new job or occupation
- C To carry out everyday tasks and duties around the home
- D To become a better informed person

11 How far would you be willing to travel in order to attend an adult evening class?
- A 0 - 4 miles one way
- B 5 - 14 miles one way
- C 15 - 29 miles one way
- D 30 - 49 miles one way
- E 50 or more miles one way

12 If you had completed some adult courses, what recognition would you want?
- A College credit
- B Notification to your employer
- C A certification of completion
- D None of the above

13 How many dependent children do you have at home?
- A One
- B Two
- C Three
- D Four
- E Five or more

14 How much education do you desire your children to complete?
- A 1 - 8 years
- B 9 - 11 years
- C Graduate from high school
- D Two years of college or vocational-technical school
- E Graduate from a four year college or university

OVER

15. How much education do you really expect your children to complete?
   A. 1 - 8 years
   B. 9 - 11 years
   C. Graduate from high school
   D. Two years of junior college or vocational-technical school
   E. Graduate from a four year college or university

16. If a vocational-technical training school on the junior college level were located within commuting distance, would you be willing to send your children to learn a trade or vocation?
   A. Yes
   B. No

17. If the answer to the previous question is No, please state the reason why.

18. How far would you permit your child to travel to a vocational or technical school if there were such a facility within the surrounding counties?
   A. 0 - 4 miles one way
   B. 5 - 14 miles one way
   C. 15 - 29 miles one way
   D. 30 - 49 miles one way
   E. 50 or more miles one way

19. Do you feel that a junior college, including occupational and technical training, is valuable?
   A. Valuable
   B. Of some value
   C. Undecided
   D. Of little value
   E. No value

20. Do you feel that a junior college is needed in this area?
   A. Yes
   B. No

21. Would you be willing to support a junior college?
   A. Yes
   B. No

22. In what ways would you support a junior college? Or, if you would not support a junior college -- Why?

23. Have you completed a questionnaire for the Area Occupational Education Research at your business or place of employment?
   A. Yes
   B. No

PARENT SURVEY ANSWER SHEET

Check one. Mother _____. Father _____. Guardian _____

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
_____
_____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
_____
_____
18. _____
19. _____
20. _____
21. _____
22. _____
_____
23. _____

Space is provided below for you to identify yourself if you wish.

_____
Name Address City

You are urged to express any further views you may have.

_____

_____

ONCE AGAIN---THANK YOU

APPENDIX B

HIGH SCHOOL STUDENT DATA TABLES

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TABLE 35

COURSE OF STUDY BEING FOLLOWED IN
HIGH SCHOOL BY STUDENTS IN
FIVE COUNTIES - BY GRADE AND SEX

Grade		College Prep		Commercial		General		Voc. - Trade Technical	
		No.	%	No.	%	No.	%	No.	%
9th	Boys	141	25 3	31	5.6	318	57.0	63	11 3
	Girls	118	24 1	20	4.1	328	67.1	22	4.5
10th	Boys	121	24 2	15	3 0	267	53.4	95	19.0
	Girls	141	28 6	23	4 7	279	56 6	45	9.1
11th	Boys	123	26 0	8	1.7	239	50.5	102	21 6
	Girls	103	26 5	17	4 4	210	54.0	59	15.2
12th	Boys	135	33.3	9	2.2	178	44.0	80	19 8
	Girls	111	34 2	13	4 0	145	44.6	53	16.3
TOTALS		993	27.3	136	3.7	1964	54 0	519	14.3

TABLE 36

COURSE OF STUDY BEING FOLLOWED BY
HIGH SCHOOL STUDENTS IN
FIVE COUNTIES - BY COUNTIES

County	College Prep.		Commercial		General		Voc. - Trade Technical	
	No	%	No.	%	No.	%	No.	%
Briscoe	37	21.4	3	1.7	127	73 4	6	3.5
Floyd	145	24.0	32	5 3	382	63 3	44	7.3
Hale	652	31.5	79	3.8	963	46.5	364	17.6
Motley	15	12.4	2	1.7	97	80.2	7	5.8
Swisher	144	21.8	20	3 0	394	59.6	98	14.8
TOTALS	993	27.3	136	3.7	1963	54.0	519	14.3

TABLE 37

EDUCATIONAL ASPIRATIONS OF
HIGH SCHOOL STUDENTS IN
FIVE SOUTH PLAINS COUNTIES

County	Drop-Out Before Graduating		Complete High School		Voc. Sch. or Bus. Sch. or Jr. College		Graduate From College		Un-Certain	
	No.	%	No.	%	No.	%	No.	%	No.	%
Briscoe	1	0.6	30	17.3	42	24.3	67	38.7	31	17.9
Floyd	11	1.8	93	15.4	172	28.5	244	40.5	81	13.4
Hale	17	0.8	291	14.0	503	24.3	926	44.7	319	15.4
Motley	2	1.7	26	21.5	32	26.4	40	33.1	20	16.5
Swisher	11	1.7	97	14.7	197	29.8	258	39.0	97	14.7
TOTALS	42	1.2	537	14.8	946	26.0	1535	42.3	548	15.1

TABLE 38

EDUCATIONAL EXPECTATIONS OF
HIGH SCHOOL STUDENTS IN
FIVE SOUTH PLAINS COUNTIES

County	Drop-Out Before Graduating		Complete High School		Voc. Sch. or Bus. Sch. or Jr. College		Graduate From College		Un-Certain	
	No.	%	No.	%	No.	%	No.	%	No.	%
Briscoe	3	1.7	43	24.9	46	26.6	54	31.2	27	15.6
Floyd	9	1.5	126	20.9	166	27.5	204	33.8	98	16.3
Hale	24	1.2	433	20.9	500	24.1	814	39.3	288	13.9
Motley	3	2.5	36	29.8	34	28.1	29	24.0	19	15.7
Swisher	12	1.8	126	19.1	202	30.6	231	34.9	89	13.5
TOTALS	51	1.4	764	21.0	948	26.1	1332	36.7	521	14.3

TABLE 39

EDUCATIONAL ASPIRATIONS OF
HIGH SCHOOL STUDENTS IN FIVE SOUTH PLAINS
COUNTIES - BY GRADE AND SEX

Grade		Drop-Out Before Graduating		Complete High School		Voc Sch. or Bus. Sch. or Jr. College		Graduate From College		Un-Certain	
		No.	%	No.	%	No.	%	No.	%	No.	%
9th	Boys	13	2.3	99	17.7	102	18.5	256	45.9	80	14.3
	Girls	5	1.0	91	18.6	106	21.7	188	38.4	95	19.4
10th	Boys	6	1.2	95	19.0	109	21.8	213	42.6	71	14.2
	Girls	5	1.0	95	19.3	134	27.2	186	37.7	72	14.6
11th	Boys	6	1.3	47	9.9	149	31.5	203	42.9	67	14.2
	Girls	1	.3	50	12.9	135	34.7	142	36.5	58	14.9
12th	Boys	6	1.5	30	7.4	111	27.4	205	50.6	53	13.1
	Girls	0	.0	30	9.2	100	30.8	142	43.7	52	16.0
TOTALS		42	1.2	537	14.8	946	26.0	1535	42.3	548	15.1

TABLE 40

EDUCATIONAL EXPECTATIONS OF
HIGH SCHOOL STUDENTS IN FIVE SOUTH PLAINS
COUNTIES - BY GRADE AND SEX

Grade		Drop-Out Before Graduating		Complete High School		Voc Sch. or Bus Sch. or Jr. College		Graduate From College		Un-Certain	
		No.	%	No.	%	No.	%	No.	%	No.	%
9th	Boys	17	3.0	127	22.8	108	19.4	218	39.1	84	15.1
	Girls	7	1.4	129	26.4	113	23.1	168	34.4	70	14.3
10th	Boys	6	1.2	121	24.2	123	24.6	182	36.4	66	13.2
	Girls	7	1.4	122	24.7	137	27.8	153	31.0	72	14.6
11th	Boys	5	1.1	83	17.5	141	29.8	175	37.0	68	14.4
	Girls	3	.8	76	19.5	135	34.7	120	30.8	54	13.9
12th	Boys	5	1.2	55	13.6	101	24.9	193	47.7	51	12.6
	Girls	1	.3	51	15.7	90	27.7	123	37.8	56	17.5
TOTALS		51	1.4	764	21.0	948	26.1	1332	36.7	521	14.3

TABLE 41

DEGREE OF AVAILABILITY OF COUNSELING IN OWN SCHOOL AS PERCEIVED BY HIGH SCHOOL STUDENTS - BY GRADE AND SEX FOR FIVE COUNTIES

Grade		Excellent		Satisfactory		Inadequate	
		No	%	No	%	No	%
9th	Boys	140	25 1	342	61 3	67	12.0
	Girls	112	22.9	313	64.0	58	11.9
10th	Boys	135	27.0	303	60.6	59	11.8
	Girls	123	24.9	310	62.9	56	11.4
11th	Boys	152	32.1	256	54.1	60	12.7
	Girls	114	29.3	232	59 6	43	11.1
12th	Boys	138	34.1	199	49.1	64	15 8
	Girls	80	24.6	193	59 4	48	14.8
TOTALS		994	27 3	2148	59.1	455	12.5

TABLE 42

DEGREE OF ACCESS TO OCCUPATIONAL INFORMATION IN HIGH SCHOOL STUDENTS OWN SCHOOL - BY GRADE AND SEX FOR FIVE COUNTIES

Grade		Excellent		Satisfactory		Inadequate	
		No.	%	No.	%	No.	%
9th	Boys	109	19.5	360	64.5	81	14.5
	Girls	68	13.9	372	76.1	49	10.0
10th	Boys	97	19.4	325	65.0	74	14.8
	Girls	68	13.8	374	75.9	49	9.9
11th	Boys	83	17 5	311	65.8	75	15.9
	Girls	101	26.0	245	63.0	41	10 5
12th	Boys	89	22.0	243	60.0	68	16.8
	Girls	66	20 3	202	62.2	54	16 6
TOTALS		681	18.7	2432	66 9	491	13 5

TABLE 43

INFLUENCE OF OTHERS ON EDUCATIONAL DESIRES
OF HIGH SCHOOL STUDENTS
BY GRADE AND SEX

Grade	Father		Mother		Brother or Sister		Other Relative		Best Friend		School Faculty		Uncertain		Other	
	No.	%	No.	%	No.	%	No.	%	No	%	No.	%	No.	%	No.	%
9th																
Boys	189	33.9	151	27.1	65	11.6	29	5.2	19	3.4	50	9.0	112	20.1	109	19.5
Girls	107	21.9	155	31.7	72	14.7	23	4.7	36	7.4	48	9.8	107	21.9	96	19.6
10th																
Boys	144	28.8	125	25.0	53	10.6	20	4.0	26	5.2	66	13.2	95	19.0	82	16.4
Girls	113	22.9	143	29.0	55	11.2	23	4.7	35	7.1	56	11.4	77	15.6	108	21.9
11th																
Boys	127	26.8	100	21.1	45	9.5	16	3.4	46	9.7	69	14.6	86	18.2	93	19.7
Girls	75	19.3	120	30.8	36	9.3	12	3.1	31	8.0	46	11.8	66	17.0	85	21.9
12th																
Boys	96	23.7	86	21.2	45	11.1	10	2.5	38	9.4	58	14.3	74	18.3	87	21.5
Girls	59	18.2	78	24.0	26	8.0	15	4.6	24	7.4	41	12.6	67	20.6	68	20.9
TOTALS	910	25.1	958	26.3	397	10.9	148	4.1	255	7.0	434	12.0	684	18.8	728	20.0

Response Error 24.2% due to student multiple answers

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TABLE 44

REASONS WHY HIGH SCHOOL STUDENTS
MAY NOT REACH DESIRED EDUCATIONAL GOALS
BY GRADE AND SEX

Grade	Interest Change		Ability		Lack of Encouragement		Finances		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%
9th										
Boys	186	33.3	59	10.6	59	10.6	128	22.9	118	21.1
Girls	177	36.2	37	7.6	32	6.5	108	22.1	130	26.6
10th										
Boys	152	30.4	50	10.0	52	10.4	135	27.0	104	20.8
Girls	195	39.6	42	8.5	27	5.5	99	20.1	124	25.2
11th										
Boys	140	29.6	43	9.1	39	8.2	145	30.7	102	21.6
Girls	152	39.1	21	5.4	25	6.4	93	23.9	95	24.4
12th										
Boys	146	36.0	27	6.7	26	6.4	116	28.6	86	21.2
Girls	130	40.0	16	4.9	13	4.0	77	23.7	87	26.8
TOTALS	1278	35.2	295	8.1	273	7.5	901	24.8	846	23.2

Response Error 1.1%

TABLE 45

INFLUENCE OF OTHERS ON CHOICE OF CAREER
OF HIGH SCHOOL STUDENTS -
BY GRADE AND SEX

Grade	Father		Mother		Brother or Sister		Other Relative		Best Friend		School Faculty		Person In Occupation		Have Not Decided		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
9th																		
Boys	162	29.0	74	13.3	56	10.0	40	7.2	17	3.0	18	3.2	75	13.4	106	19.0	87	15.6
Girls	51	10.4	119	24.3	75	15.3	44	9.0	32	6.5	20	4.1	52	10.6	96	19.6	74	15.1
10th																		
Boys	129	25.8	66	13.2	42	8.4	36	7.2	28	5.6	27	5.4	66	13.2	84	16.8	82	16.4
Girls	53	10.8	101	20.5	48	9.7	49	9.9	30	6.1	35	7.1	70	14.2	87	17.6	91	18.5
11th																		
Boys	108	22.8	58	12.3	37	7.8	42	8.9	38	8.0	34	7.2	63	13.3	74	15.6	76	16.1
Girls	30	7.7	63	16.2	29	7.5	36	9.3	30	7.7	41	10.5	58	14.9	51	13.1	82	21.1
12th																		
Boys	69	17.0	33	8.1	26	6.4	40	9.9	21	5.2	24	5.9	71	17.5	74	18.3	83	20.5
Girls	27	8.3	45	13.8	20	6.2	22	6.8	26	8.0	35	10.8	53	16.3	45	13.8	66	20.3
Totals	629	17.4	559	15.4	333	9.1	309	8.5	222	6.1	234	6.4	508	14.0	617	17.0	641	17.6

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TABLE 46

PRIMARY REASON WHY HIGH SCHOOL STUDENTS
MAY NOT ENTER DESIRED OCCUPATION
BY GRADE AND SEX

Grade	None		Physical Handicaps		Educational or Training Demands		Change of Interest		Other	
	No	%	No.	%	No.	%	No.	%	No.	%
9th										
Boys	152	27 2	30	5 4	88	15.8	192	34.4	75	13 4
Girls	108	22.1	11	2.2	55	11.2	223	45.6	76	15 5
10th										
Boys	124	24.8	24	4.8	90	18.0	173	34.6	70	14 0
Girls	108	21.9	8	1.6	61	12.4	215	43.6	93	18.9
11th										
Boys	132	27.9	15	3.2	66	14.0	171	36.2	80	16 9
Girls	76	19.5	3	.8	43	11.1	187	48 1	74	19 0
12th										
Boys	91	22 5	14	3.5	50	12.3	173	42.7	68	16.8
Girls	57	17.5	5	1 5	35	10.8	156	48.0	64	19 7
	848	23.3	110	3.0	488	13.4	1490	41 0	600	16 5

Response Error 2.7%

TABLE 47

PLANS OF HIGH SCHOOL STUDENTS
TO MIGRATE - BY COUNTIES

	Briscoe		Floyd		Hale		Motley		Swisher		TOTALS	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Plan to Move From Area	134	77.5	478	79.3	1522	73.4	101	83.5	440	66.6	2678	73.6
Do Not Plan to Move From Area	36	20.8	121	20.1	531	25.6	19	15.7	219	33 1	927	25 5

TABLE 48

REASONS WHY HIGH SCHOOL STUDENTS PLAN TO
MIGRATE FROM THE AREA
BY COUNTIES

	To See Other Places		No Jobs In Area		More Opportunity Elsewhere		No Jobs That Pay Well		Family Moving		To Attend College		Personal Reasons		Enter Armed Forces		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No	%	No.	%
Briscoe	18	10.4	6	3.5	44	25.4	8	4.6	3	1.7	60	34.7	17	9.8	6	3 5	18	10.4
Floyd	51	8.5	46	7.6	142	23.5	21	3.5	14	2.3	243	40.3	36	6 0	35	5 8	68	11.3
Hale	239	11.5	71	3.4	319	15.4	57	2.7	91	4.4	816	39.4	138	6.7	87	4.2	255	12.3
Motley	7	5.8	10	8.3	28	23.1	8	6.6	3	2.5	40	33.1	8	6.6	3	2.5	13	10.7
Swisher	54	8.2	32	4.8	108	16.3	21	3.2	18	2.7	217	32.8	55	8.3	25	3.8	72	10.9
TOTALS	369	10.1	165	4.5	641	17.6	115	3.2	129	3.6	1376	37 9	254	7.0	156	4.3	426	11.7

Note - Variations from 100% due to students' multiple marking or omission

TABLE 49

RESIDENCE PREFERENCE OF HIGH SCHOOL STUDENTS FOLLOWING EDUCATION - BY COUNTIES

County	Home County		Surrounding Counties		Texas		Elsewhere	
	No.	%	No.	%	No.	%	No.	%
Briscoe	30	17.3	23	13.3	70	40.5	49	28.3
Floyd	87	14.4	72	11.9	258	42.8	179	29.7
Hale	360	17.4	183	8.8	790	38.1	677	32.7
Motley	24	19.8	12	9.9	60	49.6	24	19 8
Swisher	130	19.7	74	11.2	263	39.8	178	26.9
TOTALS	631	17.4	364	10.0	1441	39.6	1107	30.4

TABLE 50

HIGH SCHOOL STUDENTS IN FIVE COUNTIES WHO WOULD ATTEND A JUNIOR COLLEGE OFFERING VOCATIONAL-TECHNICAL TRAINING IF WITHIN DAILY DRIVING DISTANCE - BY GRADE AND SEX

Grade	Yes		No		Uncertain	
	No.	%	No.	%	No.	%
9th						
Boys	251	45.0	88	15.8	158	28.3
Girls	232	47.4	78	16.0	140	28.6
10th						
Boys	249	49.8	79	15.8	137	27.4
Girls	228	46.2	80	16.2	146	29.6
11th						
Boys	270	57.1	60	12.7	111	23.5
Girls	190	48.8	64	16.5	105	27.0
12th						
Boys	214	52.8	72	17.8	91	22.5
Girls	160	49.2	65	20.0	80	24.6
TOTALS	1794	49.3	586	16.1	968	26.6

TABLE 51

HIGH SCHOOL STUDENTS IN FIVE COUNTIES WHO WOULD ATTEND A JUNIOR COLLEGE OFFERING VOCATIONAL-TECHNICAL TRAINING IF WITHIN DAILY DRIVING DISTANCE - BY COUNTIES

County	Yes		No		Uncertain	
	No.	%	No.	%	No.	%
Briscoe	86	49.7	34	19.7	44	24.9
Floyd	308	51.1	101	16.7	167	27.7
Hale	1021	49.3	317	15.3	530	25.6
Motley	68	56.2	10	8.3	34	28.1
Swisher	311	47.0	124	18.8	193	29.2
TOTALS	1794	49.3	586	16.1	968	26.6

VT 019 618

VT 019 618
LAMBERT, ROGER
AGRICULTURAL AND HOME ECONOMICS OCCUPATIONAL STUDY. FINAL REPORT.

BLACKHAWK TECH. INST., JANESVILLE, WIS.
WISCONSIN STATE BOARD OF VOCATIONAL, TECHNICAL, AND ADULT EDUCATION, MADISON.;
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
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DESCRIPTORS - *OCCUPATIONAL SURVEYS; *OCCUPATIONAL INFORMATION; *OCCUPATIONAL HOME ECONOMICS; *EMPLOYMENT TRENDS; EMPLOYMENT OPPORTUNITIES; *EMPLOYMENT POTENTIAL; PROGRAM DEVELOPMENT; VOCATIONAL AGRICULTURE
IDENTIFIERS - *WISCONSIN

ABSTRACT - HIGHLIGHTED IN THIS REPORT ARE THE RESULTS OF A SURVEY CONDUCTED IN TWO COUNTIES IN WISCONSIN TO GATHER SPECIFIC JOB DATA ON WAGE EARNING HOME ECONOMICS OCCUPATIONS. INVESTIGATED WERE SUCH OCCUPATIONS AS EXECUTIVE HOUSEKEEPING, HOME FURNISHINGS, AND CHILD CARE. THROUGH QUESTIONNAIRES AND INTERVIEWS WITH EMPLOYEES IDENTIFIED FROM TELEPHONE DIRECTORIES, THE INTERVIEWER'S PERSONAL KNOWLEDGE, AND ADVISORY COMMITTEES, DATA PRODUCED THESE FINDINGS: (1) OUT OF THE EIGHT JOBS STUDIED IN THE AREA OF HOUSEKEEPING, THREE WERE IDENTIFIED: MAID, SUMMER HELP, AND HOUSEKEEPER, AND ONLY A SHORT PRE-EMPLOYMENT COURSE DEEMED NECESSARY, (2) OUT OF THE 14 JOBS STUDIED IN THE HOME FURNISHING CATEGORY, NONE PRODUCED OVER FOUR JOB OPENINGS PER YEAR, AND THEREFORE DID NOT WARRANT THE DEVELOPMENT OF A FULL-TIME PROGRAM IN THAT AREA, AND (3) THE CHILD CARE JOB CATEGORY CONTAINED 25 JOBS, ALL OF WHICH WERE SIMILAR IN NATURE. IN THIS AREA, CHILD CARE ASSISTANTS WERE FOUND TO BE IN GREAT DEMAND, AS WERE FOSTER PARENTS. (SN)

FINAL REPORT

Project No. 05-014-151-222

AGRICULTURAL AND HOME ECONOMICS OCCUPATIONAL STUDY

September 29, 1972

WISCONSIN BOARD OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION

MADISON, WISCONSIN

VT019615

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FINAL REPORT

Project No. 05-014-151-222

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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AGRICULTURAL AND HOME ECONOMICS OCCUPATIONAL STUDY

Roger Lambert

Blackhawk Technical Institute
Janesville, Wisconsin

September 29, 1972

The research reported herein was performed pursuant to a grant or contract with the Wisconsin Board of Vocational, Technical and Adult Education, partially reimbursed from an allocation of federal funds from the U. S. Office of Education, U. S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official District 5, State Board or U. S. Office of Education position or policy.

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APPENDIX

INTRODUCTION AND SUMMARY

One of the criterions for new program development is comprehensive analysis of the job market which is directly related to the program training area. To do this kind of detailed analysis, it is often found that reliance on generalized job surveys carried out by the employment services and, or training institutions fail to encompass the specific kind of information needed in program planning.

To improve general job studies and personal interviews, job surveys of specific occupations can greatly enhance the reliability of long-range predictions. To do this a person knowledgeable in the field to be studied is employed to conduct the survey and summarize the results.

The three major job catagories studied were Executive Housekeeping, Home Furnishing and Child Care. Of the jobs available in the first two catagories none were of sufficient demand to warrant a training program. In the latter, Child Care, sufficient demand was noted and the development of a training program was recommended.

THE PROBLEM

Blackhawk Technical Institute has been in the process of developing new programs in many areas of instruction. The Advisory Committees for the various areas met and requested that additional data, relative to job availability be made known before any additional new programs were initiated. They cited the lack of specific job data on wage earning home economic occupations as the major reason for this request, even though a comprehensive occupational study was completed during the previous year. The major problem with the overall occupational study was that to many of the wage earning occupations for certain areas were hidden within general catagories of job classification. Specifically the objectives of the study were to:

1. To analyze current employment in the areas studied.
2. To analyze future predictions for employment.
3. To identify new or changing occupations.
4. To related employment to supplemental information, such as number of employees, size of operation, etc.

METHODOLOGY

The Advisory Committee and the administration personnel at Blackhawk Technical Institute jointly determined what job catagories were to be studied in depth. The catagories selected were as follows: Executive Housekeeping, Home Furnishings and Child Care. Each catagory contained several specific jobs each of which were surveyed.

The complete job list for each major catagory was developed by the staff, including the person who was to make the personal interview with employers. The interviewers were choosen on the basis of her familiarity with the job area, her knowledge of the community and her interviewing capabilities.

The initial step after identifying the specific job was to develop an acceptable interview format or questionnaire. (See appendix for sample). Additional data was listed on the questionnaire such as, number of employees, expansion potential, etc. Also a number of open ended questions were asked relative to each job catagory. The interviewer upon development of the acceptable forms, identified the potential employers of the persons in each job catagory. She did this with use of telephone directories, personal knowledge, Advisory Committees and other ways. An appointment was made with each employer and a personal interview was conducted in most cases. The exception to this was where an employer was unavailable or had only one or two employees. In this case the interview was conducted over the phone and the data recorded. With this type of procedure 100% success was achieved without contacting the employers identified in the job catagories studied. The geographic area studied was Rock County and the southern 3/4 of Green County, Wisconsin.

Upon completion of the interviews the data was tabulated and a final report was developed for use by the various committees.

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RESULTS AND CONCLUSIONS

The results of the studies are reported by the catagory of jobs which were studied. In this section only general results and conclusions are given. The detailed job counts and the data can be found in the appendix with each report on the job catagories.

Executive Housekeeping Job Catagory

Eight jobs were studied within this catagory and those of which produced a need of any significance. These were Maid, Summer Help and Housekeeper. Openings for other jobs appeared to be extremely limited. From comments reported by the interviewer, it appeared a very short 6-10 hour pre-employment course for maids or summer help could be utilized.

Home Furnishings Job Catagory

Fourteen jobs were studied within this catagory, none of which produced over four job openings per year. It was concluded that the number of job openings in this area, at the present time would not warrant a full-time program in the area of home furnishings.

Child Care Job Catagory

The Child Care job catagory contained 25 jobs, some of which were similar in nature but were listed separately to secure a definite pattern of employment potential. It was found that in the job area of child care assistant for day care centers, kindergartens, and elementary schools a reasonable number of full and part-time openings existed, or were predicted each year. This conclusion was the basis for development and implementation of the Child Care Assistant Program at Blackhawk Technical Institute. Another area in which a large need was found was for foster parents.

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APPENDIX

HOME ECONOMICS - RELATED WAGE EARNING OCCUPATIONS

Executive Housekeeping

NAME: _____

ADDRESS: _____

PERSON INTERVIEWED: _____

TELEPHONE: _____

Public _____

Private _____

Other _____

Present Enrollees _____

Present Capacity

1-1-72 _____

1-1-74 _____

1-1-76 _____

1-1-80 _____

Future Expansion Next Five Years

_____

_____

_____

_____

Nature of Organization: Public / Private

Total Employment	Full Time	Part Time
1-1-72		
1-1-73		
1-1-74		
1-1-75		
1-1-76		
1-1-80		

JOB TITLES	Present Employment January 1972		Additional New Positions Anticipated by: Jan. 1973		Jan. 1974		Jan. 1975		Jan. 1976		Jan. 1980		Replacement Rate (Percentage)
	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	5-10-20-25 etc.
Mgr. or Executive Housekeeper	13												10%
Maintenance	25	10											20%
Laundry	14	2											25%
Cleaning (Maid)	51	42	8	5									25%
Repair of Linens, etc.	3												
Ass't Housekeeper	11												
Summer Help		14	7										100%
Housekeeper (From Medical Asst Survey)	102	19	7	2	10	6	4	3	8	7	13	7	

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1. Would you be willing to hire trained handicapped or mentally retarded persons, if they were qualified for laundry, mail service, linen repair, etc.?

   Many were hesitate, or said yes with reservations. The yes was only providing the worker has a good memory, can follow orders and is fast enough. Example, can he clean 15 rooms a day.

2. What type of training program would benefit you the most?

   Training for maid service, 6 or 10 hour course, maintenance in general. Only two were interested in the executive housekeeper course. Many stated no need for training in this area.

3. Would you be willing to cooperate with Blackhawk Tech in a training program, for maids, laundry, cleaning, etc.

   Divided on this issue: yes, without pay and if really willing to work, many stated this as not feasible or impractical.

4. Comments:

   Two stated Executive Housekeeping Course would be beneficial. One stated a great need for a Food Service Program similar to the one in Madison. Several stated a great need for our Associate Degree Nursing or LPN course.

Executive Housekeeping Comments:

I found the people I interviewed on this survey were not particularly interested themselves in the certified Executive Housekeeping course. I imagine the people that might be most interested in this are the ones that were covered in the medical survey, as they are in the larger institutions. This information you were going to take from that survey.

Mrs. Tobin from the State School for the Visually Handicapped does feel there is a definite need for the certified Executive Housekeeping course such as is offered in Madison and needed in this district. She feels it should be an excellent course to be offered for new high school graduates, both boys and girls, and that there is a demand for these trained people, not necessarily in this district but in the Milwaukee and larger areas. She would be most happy to talk further with you or Gladys, and is willing to participate in high school career days if the course were to be introduced and you wanted to present it to these high school people. She gave me some material on the course which is attached to the survey sheet with her other comments.

Carol

HOME ECONOMICS - RELATED WAGE EARNING OCCUPATIONS

Home Furnishings

NAME: _____

ADDRESS: _____

PERSON INTERVIEWED: _____

TELEPHONE: _____

Public _____

Private _____

Other _____

Present Enrollees _____

Present Capacity

1-1-72 _____

1-1-74 _____

1-1-76 _____

1-1-80 _____

Future Expansion Next Five Years

_____

_____

_____

_____

Total Employment

	Full Time	Part Time
1-1-72		
1-1-73		
1-1-74		
1-1-75		
1-1-76		
1-1-80		

Nature of Organization Public Private

JOB TITLES	Present Employment January 1972		Additional New Positions Anticipated by: Jan. 1973		Jan. 1974		Jan. 1975		Jan. 1976		Jan. 1980		Replacement Rate (Percentage)
	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	5-10-20-25 etc.
Home Economics - Ass't													
Owner - Manager	1						1				1		
2 yr. Interior Design	5	1	4		1		2						
1 yr. Interior Design	10	1	3										
4 yr. Interior Decorator	3	2											
Consultant	13	4	2		1								
Interior Decorating - Asst.	2		2										
Drapery & Curtain Specialist	1	1	1										

JOB TITLES	Present Employment January 1972		Additional New Positions Anticipated by:										Replacement Rate (Percentage)
			Jan. 1973		Jan. 1974		Jan. 1975		Jan. 1976		Jan. 1980		
	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	5-10-20-25 etc.
Slipcover Construction													
Upholstering													
Carpet Selection & Care	1												
Home Lighting Advisor	2				1								
Kitchen Planning (1/2 require no training)	13												
Furniture Salesman (most require no training)	45	14											

1. What type of training program would benefit you the most?

   A two year Associate Degree Program in Interior Design. Several stated a desire for a one year degree in Interior Design. One stated desire for an Associate Degree Program in Lighting.

2. What institutions should be involved in providing training for Interior Decorating instruction.

   Four Year Degree - not necessary, only one interested in this course.
   Two Year Associate Degree - Numerous people interested.

3. Would you be willing to participate in training programs? Provide work stations for supervised work experience? Provide instruction or supervision?

   Most people replied yes to this question.

4. What time of day? What specific contributions would your organization be willing to make? How many hours per day?

   The work would be on a part-time basis with the hiring of the individual upon graduation of the course. The time of day was unimportant at this time and would be discussed at a later date.

HOME ECONOMICS - RELATED WAGE EARNING OCCUPATIONS
CHILD CARE

NAME: _____

ADDRESS: _____

PERSON INTERVIEWED: _____

TELEPHONE: _____
Public _____
Private _____
Other _____

Present Enrollees _____
Present Capacity

		Future Expansion Next Five Years
1-1-72	_____	_____
1-1-74	_____	_____
1-1-76	_____	_____
1-1-80	_____	_____

Nature of Organization: Public / Private

Total Employment	Full Time	Part Time
1-1-72		
1-1-73		
1-1-74		
1-1-75		
1-1-76		
1-1-80		

JOB TITLES	Present Employment January 1972		Additional New Positions Anticipated by: Jan. 1973		Jan. 1974		Jan. 1975		Jan. 1976		Total Need Jan. ~~1980~~ 4 years		Replacement Rate (Percentage)
	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	5-10-20-25 etc.
DAY CARE CENTERS													
Directors	15	3	3		3	1	3		3	1	12	2	20%
Assistant	15	34	3	6	3	6	3	6	3	6	13	27	20%
Kindergarten aide	11	6	2	1	2	1	2	1	2	1	8	4	20%
Elementary aide	21	16	4	3	4	3	4	3	4	3	20	12	20%
Foster parents	120		40		40		40		40		160		5-10%
HEAD START													
Director	1												
Assistant		2											5%
Aide	7		1				1		1		3		1-5%
Teachers	7		1		1				1		3		1-5%

JOB TITLES	Present Employment January 1972		Additional New Positions Anticipated by: Jan. 1973		Jan. 1974		Jan. 1975		Jan. 1976		Total Need Jan. 1980 4 years		Replacement Rate (Percentage)
	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	F.T.	P.T.	5-10-20-25 etc.
MISCELLANEOUS													
Hotel - Motel		7											
Churches		1		1									
Y.M. & Y.W. (Baby sitters)		6											50%
Hospital Aides	13	3	1		2		1		2		6		10%
CHILD CARE													
Dietitian	5		1										
Cook	51	8	5	1	5	1	5	1	5	1	21	4	10%
Cook Assistants	19	18	4	3	4	3	4	3	4	3		12	20%
Record Clerk	6	2		1									
Coordinator	3												
Maintenance	71	21	3	1	3	1	3	1	3	1	12	4	5% and rising
Building Supervisor	2												
Handicapped Aid	25	16	2	1	3	2	2	1	3	2	10	6	10%
EMH & TMH Aid	3												50%
Teacher	1												
Blackhawk School Aid	2												
Social Service Worker	1												

VT 019 624

VT 019 624
ANNUAL EVALUATION REPORT OF THE KANSAS ADVISORY COUNCIL FOR VOCATIONAL EDUCATION (SECOND).

KANSAS STATE ADVISORY COUNCIL FOR VOCATIONAL EDUCATION, TOPEKA.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
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IDENTIFIERS - *KANSAS

ABSTRACT - THIS DOCUMENT DISCUSSES THE EVALUATIVE FINDINGS OF VOCATIONAL EDUCATION PROGRAMS, SERVICES, AND ACTIVITIES IN THE STATE OF KANSAS AS ASSESSED BY THE ADVISORY COUNCIL. DATA WERE OBTAINED BY SURVEYING 90 OF THE EXISTING 684 PROGRAMS, WITH SELECTION OF SCHOOLS BASED ON GEOGRAPHIC DISTRIBUTION, SIZE, AND EQUITABLE REPRESENTATION OF EACH TYPE OF VOCATIONAL PROGRAM CONDUCTED. PROBLEMS INVESTIGATED WERE: (1) THE DILEMMA OF PROVIDING AID FOR POST-HIGH SCHOOL STUDENTS WHO ATTEND TAX-SUPPORTED INSTITUTIONS OTHER THAN COLLEGES, UNIVERSITIES OR AREA VOCATIONAL-TECHNICAL SCHOOLS, (2) PROVIDING FOR THE LARGE GROUP OF STUDENTS WHO DO NOT SEEK FURTHER EDUCATION, (3) DETERMINING THE CORRECT PATH TO TAKE IN REGARD TO CAREER EDUCATION, (4) PROVIDING THE OPPORTUNITY FOR THOSE AREAS AND POPULATIONS DESIROUS OF HAVING OCCUPATIONAL EDUCATION, (5) FINDING SOME SYSTEMATIC WAY OF FILLING THE VOID IN HEALTH OCCUPATIONS, (6) DEVISING SOME MEANS OF MOTIVATING AND INSTRUCTING DISADVANTAGED STUDENTS, AND (7) DEVISING SOME MEANS BY WHICH ADMINISTRATORS CAN BECOME INVOLVED IN ALL LEVELS OF PLANNING OF CAREER EDUCATION PROGRAMS. RECOMMENDATIONS ARE INCLUDED AS ARE QUOTES FROM AUTHORITIES, AND NAMES OF COUNCIL MEMBERS. (SN)

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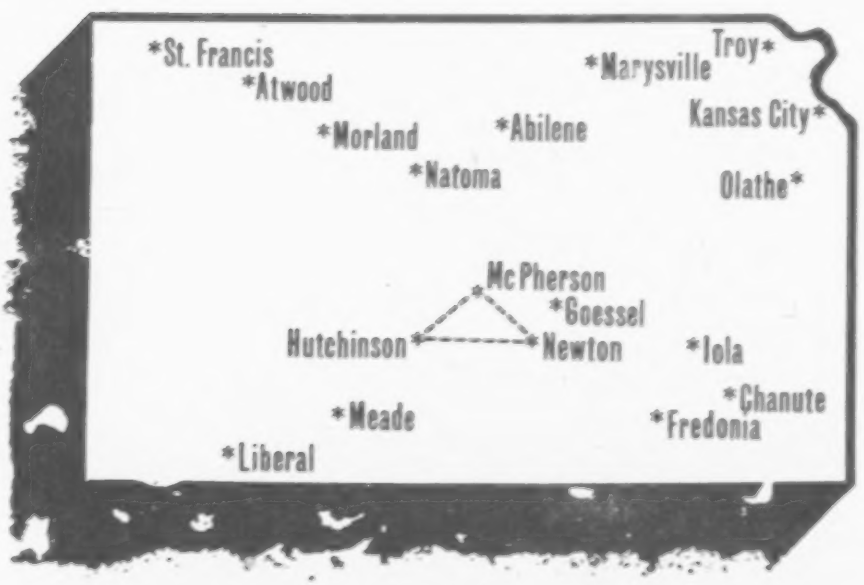
Second Annual Evaluation Report of the

KANSAS ADVISORY COUNCIL FOR VOCATIONAL EDUCATION



*Vocational Programs evaluated in these cities

October 1, 1971

UT 019 624

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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THE SECOND ANNUAL EVALUATION REPORT OF THE KANSAS ADVISORY COUNCIL FOR VOCATIONAL EDUCATION

Submitted by:
The Kansas Advisory Council
For Vocational Education

To:
The United States Commissioner of Education

Through:
The Kansas State Board of Education

October 1, 1971

2299

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FOREWORD

The Kansas Advisory Council for Vocational Education expresses its sincere appreciation to the supervisors and directors of the Department of Education and to Dr. Leo Ensman and Dr. Carl Heinrich, Kansas State Teachers College, Emporia, for assistance in this evaluation. These educational leaders served as State co-chairmen for the administration and supervision of the evaluation studies conducted in sixteen Kansas schools. We are also indebted to the administrators and teachers of each school for their excellent work in conducting the self-evaluation of the vocational phase of the school program. We are especially indebted to the citizens of the sixteen communities who generously contributed their time, effort, and suggestions as members of the community committees and provided the evaluation with community and consumer's viewpoints. We sincerely appreciate the quality leadership and dedication given the Kansas Advisory Council for Vocational Education by Director Murle M. Hayden. His ability to organize, plan, execute, and advise this Council has been of inestimable value.

The Kansas Advisory Council was created as a result of the 1968 Amendments to the Vocational Education Act. The number one responsibility of the State Council is to "evaluate the effectiveness of vocational education programs, services, and activities carried out in the year under review in meeting the program objectives."

Our study used a sampling of 90 of the 684 vocational programs offered in the State. This represented about 13% of the total. The percentage of the total was down 4% due to an increase of over 100 programs offered and the large number of one and two program schools being evaluated this year. The schools studied were selected by lot within categories designed to obtain geographic distribution, various size schools, and equitable representation of each type school offering vocational programs.

We state, without reservation, that improvement of vocational education in our State will result from the implementation of the recommendations made in this report.

The Council solicits constructive suggestions and comments concerning this evaluation study from all interested citizens of our State.

Kansas Advisory Council for
Vocational Education

J. A. McGlothlin, Chairman

PROBLEM I

Problem: Many Kansas school districts face the same problem as illustrated by a letter written by John D. Hershberger, Superintendent of Schools, at Horton, Kansas. We herewith quote two paragraphs of his letter.

> The legal 2 mill maximum levy for vocational education in USD #430 yields $15,776. Our local vocational program this year will cost about $12,500. Tuition this year to vo-tech schools will cost us $15,990. Our total vocational expense of $28,500 will mean a deficit of $12,714 in our vocational education budget. This $12,714 must come from General Fund money. With the effect of the 1970's H. B. 1825 and 2051 this presents a budget problem that has no plausible solution. The solution is to overspend the budget; seek permission to issue no-fund warrants; if permission is granted, then the following year repay the no-fund warrants, plus interest. The interest would be close to $1,000, an additional unnecessary cost to our patrons.
>
> As a Board of Education of a public school, we feel an obligation to educate our children from kindergarten through grade twelve; no more and no less. If we send eleventh and twelfth graders to the vo-tech school on a part-time basis, we probably should pay their tuition; but not for posthigh school students! But even assuming this obligation, our two-mill vocational levy would not meet our expenses. We would show a deficit of $2,574 in the vocational fund.

When students graduate from high school in Kansas, they can attend a state-supported college or university where the major portion of their educational costs are borne by State funds. If they choose to attend a community college or an area vocational-technical school, the major portion of their educational costs are paid by local tax sources. If the State is justified in assuming the major posthigh school educational costs of part of the graduates, what justification is there for the State not assuming the same share of the educational costs for all posthigh school students who wish to attend tax-supported institutions?

State financing of the major operating cost of all public posthigh school education would help alleviate the problem cited by the Horton USD; it would help solve many out-district tuition problems; it would be fair and just to all high school graduates regardless of the public institution they choose to attend; it would help build a

stronger educational system for the high percentage of our students who do not need a baccalaureate degree; and it would be much more equitable to the Kansas taxpayer.

Recommendations:

1. We recommend that the State Board of Education make state financing of posthigh school operating costs a part of their planning and do all that they can to secure the necessary legislation at the earliest possible time.

2. For immediate relief, we recommend the State Board work to maintain the present two-mill levy for the unified districts to use in conducting a vocational program in the local district. It is also recommended that the Board work for an additional two-mill levy for the district to use to pay the costs of out-district tuition for its posthigh school students.

PROBLEM II

Problem: During the 1969-1970 school year, there were 153,634* students enrolled in Kansas high schools. In the same year, there were 16,551# high school students enrolled in job-oriented vocational programs. In other words, only 10.8% of the students in Kansas high schools can be identified as preparing for a wage earning occupation. Probably over 80% are preparing for additional education, or for nothing. The Council is concerned with the large number of graduates who do not go on to school or who drop out and do not have the occupational skills needed to secure or hold adequate employment.

To properly provide for this large group of students is not an easy or simple task. It will need to be approached from several angles.

Recommendations:

3. The implementation of recommendation number one would help the expansion of career education from a financial standpoint. If the unified school districts did not have to pay tuition on posthigh school students, the money saved could be used to improve or expand their local program.

4. Certification requirements for school administrators need to be strengthened by including some work in the field of vocational education administration. Teacher and counselor preparation requirements should be designed to provide competency in the field of career education.

5. Policies that will integrate occupational information in the curriculum from the kindergarten through the elementary school would help solve some of these problems. The junior high school curriculum should provide for some exploration in a number of career fields. The high school and posthigh curriculum should provide skill training as needed by the student.

6. The State Board should continue the development and implementation of a major statewide in-service training program to encourage the expansion and improve the quality of guidance services at the elementary, secondary, posthigh and higher education levels.

*Source- Facts about Public Education in Kansas, State Department of Education

#Source-Annual Report to the U. S. Office of Education, Division of Vocational Education, Department of Education

PROBLEM III

Problem: The people in the thinly populated areas of the State have a need for career education; but, in many places, it is not available.

It is difficult and costly to have an extensive vocational program in a high school with an enrollment under 200. Of our 388 high schools, 54.6% (212) of them are under that figure. It can be seen that many of our students do not have an opportunity for employable skill training in their local high school.

A study by the central office of the Advisory Council shows that approximately 72% of our Kansas high school students live within commuting distance (30 miles) of an area vocational-technical school; however many of these schools do not have the facilities or instructors to accept students from outside the local district. The Kansas Association of Area Vocational-Technical Schools reported to the State Board that, on June 1, 1971, these schools had approximately 1,200 persons on their waiting lists for admission to vocational training programs.

Recommendations:

7. To help remedy this situation, we recommend that the Board encourage legislation that would make it easier to establish interschool cooperative vocational programs.

8. The Council would further recommend that the State Board encourage local districts to explore the possibility of expansion of their vocational programs by the use of closed-circuit television, video tapes, mobile classroom units, a tele-lecture system worked out through the telephone company, and work-study programs in cooperation with local employers. Some of these practices would require the cooperation of several districts and could probably not come to pass until after the legislation recommended above is accomplished.

9. Satellite programs with approved vocational-technical schools should be encouraged by the State Board when they appear to be feasible.

10. We recommend additional unification of districts to strengthen the schools in order that they will be able to offer a more comprehensive program.

PROBLEM IV

Problem: The more populous areas of the State can not provide for the multitude of people that should have occupational education. The present staff and facilities of these areas are so limited that hundreds of students are denied admission each year.

On June 1, 1971, the Kansas area vocational-technical schools had enrolled on their waiting list approximately 1,200 students who could not be served. In addition, these schools had many inquiries from persons who gave up when they learned the length of the waiting list. Last year, Topeka was forced to put their contracting schools on a student-quota basis and had 184 from their own district on the waiting list. They also had 850 students in over 34 classes at night in addition to regular day school programs.

In addition to the ones who apply and can not get into these schools, there are probably many more who by the nature of their aptitudes and abilities should be guided toward the programs offered in the vocational field.

Recommendation number one would help solve this problem if enacted into law.

Recommendation:

11. The operation of programs in vocational education throughout the year and the continuous use of facilities to utilize them from early morning until late at night should be investigated and practiced where feasible. The necessary funding for this expansion of services should be provided.

PROBLEM V

Problem: Kansas has need for more and better workers in the field of health occupations. The State has no well-organized system of health education to supply this need.

Informed observers predict that some form of compulsory health insurance may be passed by the Congress in the near future. Since no current plans are designed to prepare personnel for the increased need that will surely develop, the Council makes the following recommendations.

Recommendations:

12. We recommend that the State Board of Education urge the Federal government, when making grants from other agencies to the health occupations programs in Kansas, coordinate such grants through the health occupations education section of the Division of Vocational Education.

13. Expenditure of research funds to determine the current and future needs for workers in the health field would appear desirable.

14. We recommend that the Division of Vocational Education develop and implement core-curricula guidelines for the array of occupations to serve the health care needs of Kansas.

PROBLEM VI

Problem: The methods of motivating and instructing disadvantaged youth in the past have not met the needs of this segment of our student population. As a result, many leave school unprepared to hold or advance in a job. A high percentage of them are unemployed or underemployed. In many cases they become delinquent.

Recommendation:

15. We recommend that high school graduation requirements be made more flexible to accommodate the differences in interest and ambitions of these students. It is further recommended that provisions be made to enable the disadvantaged youth to take advantage of work-study programs to earn money to enable him to stay in school.

PROBLEM VII

Problem: Career education needs cover such a wide range of educational levels that administrative cooperation in planning of vocational education on all levels is becoming very urgent if an orderly system of career education is to be developed without costly and needless duplication.

Recommendation:

16. The Council recommends that the State Board of Education continue their efforts to work with the Board of Regents in planning in the field of career education to develop a constructive program that will avoid costly duplication.

Recommendations from the 1970 Report

Valid in 1971

The Board should make an intensive effort to secure more funds for vocational education.

The Board should continue to promote long-range planning on an intensive, coordinated basis.

The Board should design and implement a plan to get every school district to officially assume responsibility for developing some degree of employability in every student.

The Board should design and implement a program intended to get every secondary school to assume and exercise responsibility for appropriate placement of every student who leaves high school whether by graduation or otherwise.

The Board should continue to plan and develop a systematic follow-up of every student leaving a secondary school in the State (whether by graduation or otherwise) including the identification of why each student leaves and where he went.

The Board should continue to stimulate the program for more effective utilization of advisory groups at the State and local levels.

The Board should continue action to periodically confer with employers (through appropriate advisory bodies), to ascertain skills, competencies and knowledge required for job entry and progression.

The Board should continue working toward the development of a systematic flow of statistical and other information from various vocational programs to the Board and to various advisory groups in order to facilitate more informed advice and decision-making.

The Board should continue to work to acquire responsibility for determining classification and salary for professional staff members of the Department of Education.

THESE THINGS WE BELIEVE

Career education is the greatest unmet educational need in Kansas.

Vocational education has been established in several types and levels of educational institutions in Kansas with little systematic organization or planning through the years. We are now faced with an educational need that our secondary and postsecondary institutions are hard pressed to meet. The Council believes that the institutions that exist in each community, whether they be high schools, colleges, community junior colleges, or area vocational-technical schools, as well as business, industry, and labor, should cooperatively assume the responsibility, with adequate State and Federal aid, of providing the career education needed by the people of the community.

All persons in the State should have access to occupational education wherever they may live.

Posthigh students who attend area vocational-technical schools and later wish to continue their education can not, in most cases, secure credit for knowledge and skills acquired beyond their high school education. Colleges and universities should make some provision for the evaluation of accomplishments of these people.

All educational institutions should be responsible to help place their terminal students in a job whether the student is a graduate, a qualified non-graduate, or a dropout.

Vocational teachers should keep up to date with their teaching field of industry, business occupation, agriculture, or other fields by working in an "on going" concern for a short period at frequent intervals.

Unions and employers can provide the schools a resource of special information that is to date largely unused. Vocational educators should immediately take advantage of this source of information for the enrichment of their programs.

It is the responsibility of the educational system of the State to reduce, if not stop, the flow of youth into the ranks of the unemployed by preparing each of them for a career.

A strong system of career education that includes elementary background material, a junior high school orientation program, and vocational education on the secondary and postsecondary levels as needed will do more to upgrade our society than anything else we can do in education.

If the Governor and the Legislature want to do something to meet the needs of vocational education, they can find a way. If they do not want to do anything, they can find excuses.

Some Kansas colleges and universities are expanding their occupational education into fields that, without administrative coordination, may soon develop an undesirable competitive situation that will weaken the total Kansas educational program as well as cause costly duplication. The State Board of Regents should work with the State Board of Education in establishing occupational programs where they are needed for the welfare of Kansas people and avoid placing them in regions where these programs are presently available.

The vocational youth organizations are one of the most effective tools for leadership and citizenship training in the hands of the vocational teacher. We feel that background work in the structure of these organizations should be given in the teacher training institutions and that inservice training should be pursued by the teacher to keep these organizations up to date and viable for all youth.

Response of the State Board of Education
To the First Evaluation Report

The Kansas State Board of Education has responded very well to the 1970 recommendations of the State Advisory Council for Vocational Education. Extraneous circumstances made it impossible for them to carry out all of the recommendations, but within the realm of their capabilities, their record is very good. Some of the recommendations and the response of the Board are herewith reported.

Recommendation (1970)

The Board should arrange for an objective study and analysis of the respective responsibilities of secondary schools, area vocational schools, community junior colleges and four-year institutions of higher learning with regard to vocational course offerings and responsibilities throughout the State. The results should be the basis for possible changes in legislation and policies. This recommendation merits the highest priority.

Board Response

The State Board of Education requested that the Legislature broaden the scope of the Master Planning Commission study (phase I) to include programs in vocational-technical education in the first two years of four-year college offerings. The Legislature authorized the Master Planning Commission to include the four-year college vocational-technical programs as requested by the Board. This study now includes all of the recommendations of the Council, except the secondary schools that were not included in phase I of the Commission charge.

Recommendation (1970)

The Board should initiate cooperative action among the Board, local districts, and other state agencies to identify prospective employment opportunities for the youth of Kansas.

Board Response

The State Board is requesting the Legislature to enact a bill which would permit cooperation between school districts which, among its services, would be a provision for comprehensive vocational program.

Recommendation (1970)

The Board should design and implement a plan for systematic followup of every student leaving a secondary school in the State (whether by graduation or otherwise) including the identification of why each student leaves and where he went.

Board Response

The State Board is cooperating with Kansas State Teachers College in Emporia in the followup study described as follows:

> A three-year study to develop a systematic followup procedure of students completing vocational-technical education programs is currently in its second year at Kansas State Teachers College, Emporia. This is an effort to utilize through social security numbers a followup system that should be able to account for every student who has been involved in vocational education at any level. At the present time, the U. S. Office of Education, Social Security Office, Washington, D. C., and the Department of Internal Revenue are supporting these endeavors which can, if perfected, develop not only a statewide system of followup but one that can be used nationwide in the follow up and accountability of students and monies spent for vocational education.

Recommendation (1970)

The Board should initiate action to make the State Plan more a State of Kansas Plan, a more concise plan, a shorter and more specific plan, a more comprehensive plan. A "popular" version should be made and widely distributed.

Board Response

Research funds could be used to staff the research coordinating unit to develop the state plan and make it more specific and comprehensive, as well as to develop a popular version for Kansas. Staff for this section was not included in the Governor's request to the Legislature.

It is regrettable that the Federal monies made available for funding of the research coordinating unit, administrative staff, will be lost to the State for research purposes if the positions are abolished by the Legislature. The need for a Vocational Education Research Coordinating Unit is critical if vocational-technical education is to expand and serve the needs of the persons within our State for which vocational education was designed to serve.

The research coordinating unit, as designed and planned by the U. S. Office of Education, is a coordinating function rather than a pure research organization. It is the responsibility of the research coordinating unit to coordinate research activities created throughout the State as well as other states in joint endeavors. They also would be responsible for reviewing research conducted in the Vocational Education Research Centers established by the U. S. Office of Education and for disseminating the findings of these research centers to interested persons within our State.

If vocational education monies are to be utilized to the best advantage, it would seem imperative that the research coordinating unit be reinstated in the Fiscal Year 1972 budget of the State Department of Education, Division of Vocational Education.

Recommendation (1970)

The Board should make an intensive effort to secure more funds for vocational education.

Board Response

The State Board requested an increase in State funds for vocational education, but the Governor did not support the request. When the Board appealed the reduction of these requested funds, they were unable to get them restored by the Ways and Means Committee.

Legal restrictions on tax levies and budget levels make it impossible for some and extremely difficult for all local boards to support vocational education programs to meet growing needs.

Recommendation (1970)

The Board should design and implement a program for more effective utilization of advisory groups at the State and local levels.

Board Response

The State Board of Education will require at the time of program approval, the annual report of the appropriate local advisory council detailing areas of strength, areas needing improvement, and an indication that the program is appropriate for the state of the art. A list of craft committees and the programs for which appointed must be included.

Recommendation (1970)

The Board should precipitate an evaluation of vocational teacher education statewide and thereafter initiate action for improvement and expansion. Agri-business teacher education is one area meriting special attention.

Board Response

The State Board will evaluate in depth the effectiveness and adequacy of vocational teacher-training programs in the state on a continuing basis.

Recommendation (1970)

The Board should maintain a capability for meeting special training needs by reserving 5% of its "Part B" funds for contingencies of this type.

Board Response

The State Board made provision to set aside some funds for special training for new industry. The Executive Director of the Kansas Department of Economic Development reports that the ability of the Kansas vocational educators to expand their training capabilities on a short notice has been very effective in helping to bring new industries to Kansas.

QUOTABLE QUOTES

Dr. S. P. Marland, Jr., U. S. Commissioner of Education

"Almost all of the shockingly high number of unemployed youth are products of the general curriculum, and we can expect small improvement until the general curriculum is completely done away with in favor of a system of high school education with but two exits--continued education or employment--and nothing else."

A. V. A. Member-Gram, American Vocational Association

"The average unemployment rate of vocational education graduates between the ages of 18-24 is 5.2%. The average unemployment rate of those in the same group who do not have the advantage of a vocational education background is 24%."

Reports of the National Advisory Council on Vocational Education

"At the very heart of our problem is a national attitude that says vocational education is designed for somebody else's children. This attitude is shared by businessmen, labor leaders, administrators, teachers, parents, students. We are all guilty. We have promoted the idea that the only good education is an education capped by four years of college. This idea, transmitted by our values, our aspirations and our silent support is snobbish, undemocratic, and a revelation of why schools fail so many students.

"Students should be able to go to school the year around. It is inconceivable that we plan to continue to let our school plant lie idle three months of the year. Rural schools must give their students opportunities to train for urban jobs, since many of them are bound for the city.

"These concerns lead us to one fundamental policy: The Federal government should invest at least as much money in reducing the flow of untrained youth (into the unemployment pool) as it invests in reducing the pool of unemployed.

"We favor a separate Department of Education, for only in that way will education speak in concert with labor to meet the critical needs of the country for vocational and technical education as career preparation.

"Students learn best when they want to learn....A school in which getting a job is part of the curriculum is more likely to have students who understand why reading and mathematics make a difference than a school which regards employment as somebody else's business.

"There is an 'educational' consumer revolt developing in our land today. The public's limit of tolerance has been reached and they are on the verge of wresting control of the delivery of educational services from the managers of public education. Public officials responsible for education, both elected and appointed, need to be reminded of Alexander Hamilton's statement, 'Here sir, the people govern!' "

Jack Lacy, Executive Director
Kansas Department of Economic Development

"The public schools....ought....to concentrate more on general vocational attitudes and skills....

"It was of great importance to the industrial development program of Kansas when the State Board of Education set aside a portion of the federal vocational education dollars to be used for the training of workers in new and expanding industries....We have already seen the success of this program in training workers for the McCall Corporation in Manhattan, and I might say McCall's would never have located in Manhattan, or the State of Kansas, if the area vocational education school had not been available and efficient in its operation....vocational training has come into its own in Kansas, and we are pleased to tell our prospective industrialists of the fine system of training that we offer.

"We invest about $2,050 to educate the average college student and about $940 for vo-tech.

"More than 2/3 of the job openings, arising from occupational growth and replacement needs in Kansas through the 1970's will be in clerical, sales, service, blue collar, and farm jobs that usually do not require a college education.

".....in every survey relating to employment criteria, the matter of attitude, work habits, getting along with other people, initiative are always rated at the top. The time will come when business will demand this type of achievement motivation in our schools--and it belongs in vocational education."

FIRST PUBLIC MEETING OF
THE KANSAS ADVISORY COUNCIL
FOR VOCATIONAL EDUCATION

Paul Fleener, Kansas Farm Bureau

"Contrary to public opinion, the need for vocational training in agriculture, agri-business, and farm mechanics is not declining. We urge adequate vocational training programs to meet these needs.

"We recommend and will support legislation which would provide greater state financial support for vocational education.

"We believe that the junior colleges of this state should have a significant role in future vocational and technical education programs.... We believe that there are opportunities to coordinate vocational and college preparatory programs in junior college. Both programs should have equal status.

"Governor Docking hailed agriculture as the backbone of the Kansas economy. He said, and I quote, 'I am certain this will always be true. Most of our Kansas industries and a major portion of all business activity evolves from the basic industry of agriculture, which is by far the largest of this State's great industries.' "

Jack McGlothlin, United Transportation Union

"The promise of the Vocational Education Act has, to a disappointing extent, gone unfulfilled in many localities, largely because there has not been enough participation by organized labor in the local decision-making process.....

"In the past, I have heard union leaders criticize vocational education for offering outmoded instruction, with out-of-date equipment, in poor buildings, for obsolete occupations..... Union people criticize because they want expansion of the program, not limitations.

"Admiration of past programs should not be an obstacle to designing curricula that meet present and future needs. Vocational educators can take pride in past accomplishments and still be flexible enough to meet changing demands for training.

"Organized labor does, and will do, everything it knows how to do and is capable of doing to help this (vocational) program. We see its benefits to us and the people, and we predict it will grow in benefits in the future."

Charles Potter, Hunter Advertising Agency

"I will have to give you my viewpoint as a student. Behind my name in the program which you all received, it says I am a recent graduate of a vocational program, which I am. But what it doesn't say, and this is important too, I feel, is that I am also a college dropout and a junior college dropout. There is a definite reason for this. I would like to tell you the story behind it.....

"....So we went to college the first year, and in the first year, I found it a little bit lacking....I didn't feel it was going to be necessary for me to have all those subjects, when I was going to be an artist. Consequently, at the end of the first year, I ended up on probation.....I decided to go back to my home town. At this time they had a junior college; so I entered the junior college.

"I just couldn't get interested in subjects that I didn't feel I really needed for what I wanted to do. So I forgot about the whole idea of pushing toward a certain career in a certain field, and I went to work. I left home, went to work...., got married, and had kids....I stopped one day, and I thought 'what am I doing here. It's time to go back to school and prepare for a career.'.....But I didn't want to go back and take the English courses, and the speech, and all the rest.

"I had found a school in Tuscon, Arizona, and I had just about decided to pull up stakes and go there, when one of my friends told me about a school just outside of Salina--the area vocational-technical school....I went out there, and I walked into the classroom, and I'll never forget this. I walked in there, and all over the walls were the pictures the students had drawn. And they were good. They were <u>really</u> good. It surprised me. I had expected to see high school work. These pictures....were professional looking.....I thought that any school that could do this with kids just out of high school has got to be some kind of school. So I enrolled, and I am glad I did. I can't tell you how much I appreciate it.....The thorough instruction that I got in that school was outstanding. I feel that it is instruction I wouldn't have received in college.

".....Kansas has some of the finest institutions in the country....I don't put down the colleges in this State. The thing I want to point out is that I wasn't interested in the broad liberal arts education. I couldn't see failing to get a degree in art because of the ....courses....that I had to take.... If a person wants to gear his education toward one field, I believe vo-tech is the way to go. I recommend it over and over again to many people.... If a person is looking for one thing, whether he wants to be a mechanic, welder, electronic technician, or commercial artist, Kansas vocational-technical schools are the place to go. I really believe this."

Dr. Bertram Caruthers, Assistant Superintendent
Kansas City, Kansas

"The lack of occupational information in the elementary schools and the lack of vocational guidance in the secondary schools has resulted in many students dropping out of school and/or finishing high school with no marketable skills or knowledge concerning opportunities for them in the world of work.

"Teachers and counselors have not been exposed to vocational guidance concepts; therefore, a training program for such personnel is needed; so that with the necessary information and skill, they can begin to get along with this problem of providing young people with guidance.

"One of the speakers before me mentioned that the persons who taught him had been in the field. They knew whereof they spoke and taught. It is my contention that these counselors are not only requesting more formal course work, but they are seeking and requesting on-the-job experience related to vocational counseling."

Dr. John Visser, President
Kansas State Teachers College, Emporia

"More and more, I am coming to the conclusion that the distinction between vocational education and general education is a very thin and indistinct one, and I think this works out to the advantage of all of us. In the final analysis all education has a strong vocational orientation.

"Every time we turn a person loose on society that can not sustain himself or herself (and I say that today it is equally important for a woman to have these skills as it is for a man) sooner or later, someone else is going to have to sustain that person or he becomes a ward of the State. Therefore, it is important we not let a youngster leave that process at whatever level of education he may be until he can sustain himself.

".....young people come (to college) for a variety of reasons---sometimes it is parental pressures, sometimes it is peer pressure, and sometimes it is that damnable status syndrome--you just got to go to a college or university. Sometimes the reason is young people not knowing what else to do. This is a problem."

Garrett Morrison, Community Relations Manager
The Boeing Company

"The individual who comes to industry with a basic training in a skill or trade plus the basic education which will permit specific training can then be utilized to his greatest potential.

".....In the realm of the basics, there is quite a bit of similarity, if not to say duplication, between the handling of these items in the junior college and in the vocational and technical schools. There is one large difference, however, to the individual. The one who receives such basic training in a junior college is given credit, credit which can apply later if he chooses to go on for a degree. For the vocational and technical student, it is an entirely different story. Even though his training....has been identical to that given in a junior college, he has no credit he can carry on with him. Should he decide later to go on for a degree, he will be forced to retake a part of the work he had previously taken in the vocational and technical school."

1971

Facts About Vocational Education in Kansas

AVTS's

There are fourteen area vocational-technical schools in the State of Kansas, offering a total of 308 programs in 90 different occupational areas. A study shows that approximately 72% of our Kansas high school students live within commuting distance (30 miles) of an area vocational-technical school.

USD's

Total number of unified school districts in the State of Kansas - 311

Unified school districts with vocational programs in an approved AVTS - 19

Number of unified school districts having vocational programs

No. USD having 1 vocational program	94	=	94 programs
No. USD having 2 vocational programs	73	=	146 programs
No. USD having 3 vocational programs	12	=	36 programs
No. USD having 4 vocational programs	3	=	12 programs
No. USD having 5 vocational programs	3	=	15 programs
No. USD having 7 vocational programs	2	=	14 programs
No. USD having 9 vocational programs	1	=	9 programs
	188		326 programs

(eight USD's have programs in an AVTS and programs under the unified district also.) (311 - (19+188-8) = 112 USD with no vocational education programs)

Of the unified school districts offering vocational programs, 139 offer only vocational agriculture and/or vocational homemaking. In only 60 unified districts in the state do students have a choice of other occupational areas.

One hundred eighty unified school districts offer programs in 18 different occupational areas.

Junior Colleges

Total number of community junior colleges in the State of Kansas - 19

Junior colleges with vocational programs in an approved AVTS - 5

Number of community junior colleges having vocational programs

No. CJC having 1 vocational program	1	=	1 program
No. CJC having 2 programs	3	=	6 programs
No. CJC having 3 programs	1	=	3 programs
No. CJC having 4 programs	1	=	4 programs
No. CJC having 5 programs	2	=	10 programs
No. CJC having 7 programs	1	=	7 programs
No. CJC having 9 programs	1	=	9 programs
No. CJC having 10 programs	1	=	10 programs
	11	=	50 programs

Eleven junior colleges offer 50 programs in 23 different occupational areas.

- -

Enrollment in Kansas High Schools

Student enrollment	Number of schools
99 or less	99
100-199	113
200-299	57
300-499	53
500-799	25
800-999	7
1,000-1,999	23
2,000 or more	11

Source: Selected School Statistics, January 1971, Kansas State Department of Education

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SECONDARY ENROLLMENTS IN VOCATIONAL EDUCATION
BY SERVICE AND FISCAL YEARS

	Fiscal Year					
	1968	(1)	1969		1970	
Service	Enrollment	%	Enrollment	%	Enrollment	%
Agriculture	6,854	27.6	7,030	26.3	7,551	23.9
Distribution	1,499	6.0	2,041	7.6	1,499	4.8
Health	(27)(2)		(33)		(47)	
Home Economics	11,873	47.8	12,403	46.3	15,553	49.3
Office	1,790	7.2	2,218	8.3	2,917	9.2
Trade & Industrial	2,820	11.4	3,069	11.5	4,045	12.8
Totals	24,836	100.0	26,761	100.0	31,565	100.0

Source: State Department of Education Annual Reports to U. S. Office of Education

(1) Percentage shown is the portion of total enrollment for the fiscal year in in each service.

(2) Number of health occupations students in cooperative programs under T&I

POST-SECONDARY ENROLLMENTS IN VOCATIONAL EDUCATION
BY SERVICE AND FISCAL YEARS

	Fiscal Year					
	1968	(3)	1969		1970	
	Enrollment	%	Enrollment	%	Enrollment	%
Agriculture	95	3.1	104	2.6	416	7.9
Distribution	436	14.2	657	16.2	343	6.5
Health	352	11.5	555	13.7	485	9.3
Home Economics	14	0.5	3	0.1	6	0.1
Office	516	16.8	567	14.0	1,332	25.4
Trade & Industrial	1,652	53.9	2,161	53.4	2,667	50.8
Totals	3,065	100.0	4,047	100.0	5,249	100.0

Source: State Department of Education Annual Reports to U. S. Office of Education

(3) Percentage shown is portion of the total enrollment for the fiscal year in each service.

ADULT ENROLLMENTS IN VOCATIONAL EDUCATION
BY SERVICE AND FISCAL YEARS

	Fiscal Year					
	1968 Enrollment	(1) %	1969 Enrollment	%	1970 Enrollment (2)	%
Agriculture	1,521	5.2	1,310	3.3	1,031	2.6
Distribution	5,625	19.1	5,621	14.2	6,221	15.6
Health	747	2.5	589	1.5	291	0.7
Home Economics	4,555	15.5	5,286	13.3	4,347	10.9
Office	2,016	6.9	2,786	7.0	5,572	13.9
Trade & Industrial	14,953	50.8	24,038	60.7	22,490	56.3
Totals	29,417	100.0	39,630	100.0	39,952	100.0

Source: State Department of Education Annual Reports to U. S. Office of Education

(1) Percentage shown in the portion of total enrollment for the fiscal year in each service.

(2) Unduplicated count of individuals enrolled.

ENROLLMENT IN VOCATIONAL EDUCATION OF
SELECTED CATEGORIES OF STUDENTS
FY 1970

	Disadvantaged	Handicapped	Apprentices	Minority Groups	Total (3) Enrollment
Grades 7-12	4,508	2,353	--	2,202	31,565
Postsecondary	607	317	--	403	5,249
Adult	3,481 (4)	854	1,248	1,651	39,952
Work study	(124)	(31)	--	(59)	(155)
Cooperative	(384)	(122)	--	(89)	(1,578)
Totals	8,596	3,524	1,248	4,256	76,766

Source: State Department of Education Annual Report to U. S. Office of Education.

(3) Total enrollment of all students in vocational education at this level or in this program.

(4) Numbers in parenthesis are students included in enrollments above and omitted from totals.

KANSAS ADVISORY COUNCIL
FOR VOCATIONAL EDUCATION

Membership Category	Name	Address
1	Jack Lacy	Department of Economic Development State Office Building, Topeka
1	Ed Doherty	Cessna Aircraft Company, Box 1028 Hutchinson
1	Jack McGlothlin	United Transportation Union 704 Turner Road, Pittsburg
2	Russell Graham	Coffeyville Community Junior College Coffeyville
2	Leland D. Boone	Vocational-Technical Institute, Kansas State College, Pittsburg
2	James Shaver	Rural Route 1, Goodland
3	Garland P. Ferrell, Jr.	Beaumont
3	Edwin Marshall	Mark Henry Associates, Atchison
4	Carl Knox	Superintendent of Schools, Lawrence
5	Dean Haddock	Guaranty State Bank, Beloit
5	T. R. Palmquist	700 S. 55th Street, Kansas City
5	Harold Finch	Johnson County Community Junior College, Shawnee Mission
6	T. P. McGinnis	Bureau of Apprenticeship & Training, 400 Croix, Topeka
7	Alvin E. Morris	Superintendent of Schools, Wichita
8	Harry A. Shimp	Kansas Vocational Rehabilitation Center, Salina
9	Thomas A. Lassiter	Turner House, 3rd and Stewart, Kansas City
9	Ray E. Frisbie	Kansas Farm Bureau, Manhattan

Murle M. Hayden, Executive Director
State Advisory Council for Vocational Education
120 East Tenth, Topeka

2327

SCHOOL DISTRICTS, COMMUNITY COMMITTEES, AND STATE CO-CHAIRMEN INVOLVED IN THE EVALUATION

Sixteen school districts were included in the evaluation which involved two phases of activity in the district:

1. Self-Analysis - Responses to questions by such persons as teachers, counselors and administrators.

2. Community Reactions - The questions submitted to school personnel and their responses were presented to a cross-sections of citizens in each community. Some additional questions were asked the community committee.

The information gathered in the two activities listed above served as a major basis for the recommendations in this report. Deliberations of the community committee were chaired by staff from Kansas Department of Education or Kansas State Teachers College of Emporia following uniform, specified procedures.

1. Abilene (Unified District 435)

School Administrator — E. L. Fiedler
State Co-Chairman — Murle M. Hayden

Community Committee Members:

Mrs. Robert Dahl	Miss Patricia Emig
Paul Flynn	Steve Garten
Wendell Gugler	Mrs. Gwen Jordan
Miss Vickie Linder	Mark Mayden
Harold Scanlon	Bruce Sexton
Ron Shouse	Mrs. Robert Soelter
Curtis Stoffer	Mrs. Dean Robson
Mrs. Ray Whitehair	Warren Knoll
Vern Holt	

2. Atwood (Unified District 318)

School Administrator	Joe L. Gray
State Co-Chairman	Wilbur A. Rawson

Community Committee Members:

Fred Gatlin	Lyle Worthy
Alfred Koch	Gerald Heussman
Joe Mentlick	Curtis Schmidt
Don Threlkel	Ann Domsch
Mrs. Jim Dixson	Mrs. Viola Wright
Mrs. Mary Ellen Horton	Mrs. Betty Marks
Stella Finley	Barbara Holle

3. Chanute (Neosho County Community Junior College)

School Administrator	Dr. J. C. Sanders
State Co-Chairman	C. C. Eustace

Community Committee Members:

Mrs. Anna Ratliff	Mrs. Dora Noland
Mrs. Edna McDaniel	Dr. Henry K. Baker
Father Jerome Beat	Mrs. Charlotte Greer
Mrs. Floyd Thuston	James McGuffey
Harry Joe Kennedy	Mike Roberts
George McCune	Charles Pillot
Robert Ward	

4. Fredonia (Unified District 484)

School Administrator	P. C. Hesser
State Co-Chairman	Dr. Leo Ensman

Community Committee Members:

Mrs. Robert Evans	Dan Reutlinger
Kenneth Streets	Robert Githens
Howard Sell	Lynn Shue
Mrs. Beverly Stryker	John Bambick
Charles Palmer	Curtis White
J. Dewey Long	Orlin Sell
Miss Debra Ward	

5. Goessel (Unified District 411)

School Administrator	Raymond W. Juhnke
State Co-Chairman	R. B. Daniels
Community Committee Members:	
Waldo O. Voth	Verney Voth
Floyd Nickel	W. O. Schmidt
Elmer Enns	Perry Klassen
Rodney Duerksen	Myron Schmidt
Richard Reimer	Warren Flaming

6. Iola (Unified District 257)

School Administrator	Ennor G. Horine
State Co-Chairman	Don Strait
Community Committee Members:	
Raymond Smith	Tom Maxwell
John Womack	Dr. Eugene Myers
Mrs. Jeanice Cress	Lauren Caillouet
Don Andrews	Howard Gilpin
Allen Teague	Gordon Conger
Stanley Dreher, Jr.	Emerson Lynn, Jr.
Mrs. Raymond Houser	Mrs. Larry Freeman
Orville Kretzmeier	Ronald Coltrane
Miss Beth Clark	Dennis Kuykendall

7. Kansas City (Kansas City Area Vocational-Technical School)

School Administrator	Dr. O. L. Plucker
State Co-Chairman	John E. Snyder
Community Committee Members:	
Clinton Fuller	Kent E. Crippen
Judy Wistuba	Mary Bullock
Charles Simpson	Marjorie Toll
Bob Jahr	Rosemary Gammon
Ted Ungerman	Willard Bradbury
Mrs. Harold E. Robbins	Charles Terry
Allen Powell	Howard C. Hamilton
Cherita Knight	Raymond J. Campbell

8. Liberal (Liberal Area Vocational-Technical School)

School Administrator	Dr. J. L. Smalling
State Co-Chairman	Dr. George Bridges

Community Committee Members:

James K. Curry	Steve Munden
Gordon Foster	Kenneth Powell
Roy E. Smith	George Rosel
Dudley Freeman	Jack E. Engle
Robert Carlile	Nelson Escue
Niel Watson	Marjorie Carson
Mary Blanchard	Quinten Martin
Joe VanCleve	Vern D. Livengood
John Elliott	Jack Chilcott
Dean Warner	Darrell Skinner

9. Marysville (Unified District 364)

School Administrator	Ray L. Brown
State Co-Chairman	Richard Nelson

Community Committee Members:

Harvey Hubka	Lee Price
Ray Cohorst	James Taphorn
Garth Hooper	Delmar Schotte
Sharon Miller	Nelda June Ungerer
Connie Szopenske	Janet Pralle

10. Meade (Unified District 226)

School Administrator	Frank Rybnick
State Co-Chairman	H. D. Shotwell

Community Committee Members:

Arlie Johnston	Lloyd Feldman
Royce Orme	Don Musgrove
Dean Adams	Bill Painter
Charles Reynolds	Jerry Rumbaugh
Randy Randolph	Robert Bond
Tracy Underwood	Jom Borth
Gary Pennington	William Brannan
George Martin	

11. Morland (Unified District 280)

School Administrator	Darris T. McConkey
State Co-Chairman	Elizabeth Hirschler Mettling
Community Committee Members:	
Robert Culley	Danny Dinkel
Tom Dinkel	Jerry Goddard
Ralph Keith	Charley Minium

12. Natoma (Unified District 391)

School Administrator	Milton L. Cooper
State Co-Chairman	Tom Moore
Community Committee Members:	
Ernie John	Milan Masters
Roger Beisner	Delbert Deschner
Paul Hays	Merle Newton
Dick Snook	Frank Ruggels
Ted Blank	Mark Elliott

13. Newton-Hutchinson-McPherson (Central Kansas Area Vocational-Technical School)

School Administrator	Dale Brooks
State Co-Chairman	John Vigneron
Community Committee Members:	
G. C. Brown	Jack Canning
Gene Blake	David Setty
Jim Martinez	Howard Southworth
Ben Blackburn	Les Banks
Harry Stensel	Warren Farmer
A. A. "Gus" Moore	Marvin Wambeganss
Don Vickers	Kenneth Green
Kenneth Smith	Henry Deutsch
George Holcumb	Joe Phleger
Robert Peel	Art Long
Mike Poorman	Marilee Robinson
Sam Bernard	Pam Harden
John Kline	Harold Ryan
Cheryl Rayl	Don Nyberg
Bill Selby	Steve Mielke
Kenneth Keast	Ralph Dunlop
Bob Rumble	Charles Rayl
Elbert Turner	Bilbert Regier
Charles Malm	Al Eklund
Dr. Howard Perkins	Debbie Cooner
Gary Case	Ken MacCallister
Robert Eickbush	Bruce Brunk

13. Central Kansas Area Vocational-Technical School (continued)

Community Committee Members:

Dr. V. D. Lundstrom	Gary Jantz
Frank Anderson	Bryan Holloway
Norvin Rolander	Davd Bronson
Keith Birch	Bob Sisson
Dwight Morris	Cliff Watkins
Wesley H. Burk	Herb Heidebrecht
Dr. William Collier	Nora Paulseen
Mrs. Eldred Fry	Mrs. Willard Androes
Mrs. Mary Lasater	Mrs. Ann Walline
Don Gronau	Arthur Schmidt
Luther Ray	Trevor Lehman
Mrs. Jim David	Mrs. Lydia Craig
George Hanna, Jr.	Reynaldo Gonzalez
Mrs. Johnnie Ratzlaff	

14. Olathe (Unified District 233)

School Administrator	Dr. M. L. Winters
State Co-Chairman	Dr. Carl Heinrich

Community Committee Members:

Glen Borders	George Burns
Joe Clark	George Scroggins
Mike Ater	Roger Hart
Cynthia Guillory	JoAnna Samyn
Pam Cox	John Lawson
Don Asher	Mrs. Marvin Allen
Gerald W. Hiatt	

15. St. Francis (Unified District 297)

School Administrator	Carl H. Sperry
State Co-Chairman	Lawrence Simpson

Community Committee Members:

Gordon Popp	Dale Schlepp
W. E. Touslee	Larry Henry
Ed Keller	Donna Boll
Raedell Poling	Charles Curry
Billy Lampe	Ray H. Zweygardt
Pat Kinen	Peter Sherlock

16. Troy (Unified District 429)

School Administrator	Lauren Y. Gaddis
State Co-Chairman	Clifford M. Shenk

Community Committee Members:

Jerry Dishan	Jerry Jarrett
Richard Stahl	George Jorgenson
Mrs. Valeta Calahan	James Ruddy
Alta Beaty	Paul Whitaker

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NEW HAMPSHIRE ADVISORY COUNCIL FOR VOCATIONAL-TECHNICAL EDUCATION THIRD ANNUAL REPORT, 1972.

NEW HAMPSHIRE STATE ADVISORY COUNCIL FOR VOCATIONAL-TECHNICAL EDUCATION, CONCORD.
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IDENTIFIERS - *NEW HAMPSHIRE

ABSTRACT - SUMMARIZED IN THIS DOCUMENT ARE THE FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS OBTAINED FROM THE ADVISORY COUNCIL'S ASSESSMENT OF VOCATIONAL AND TECHNICAL EDUCATION PROGRAMS IN THE STATE OF NEW HAMPSHIRE DURING THE 1972 INTERIM PERIOD. HAVING AS THEIR GOALS THAT THE EVALUATION SHOULD FOCUS ON THE STATE'S GOALS AND PRIORITIES AS SET FORTH IN THE STATE PLAN, THE EFFECTIVENESS WITH WHICH PEOPLE AND THEIR NEEDS ARE SERVED, THE EXTENT TO WHICH 1970 AND 1971 COUNCIL RECOMMENDATIONS HAVE RECEIVED DUE CONSIDERATION, THE EVALUATION TEAM LAUNCHED MASSIVE INVESTIGATIONS INTO PROBLEMS AREAS. FINDINGS INCLUDE: (1) THE STATE HAS MADE ACCOMPLISHMENTS, NEW STAFF HAS BEEN ADDED IN VARIOUS ADMINISTRATIVE CAPACITIES, (2) ADULT EDUCATION PROGRAMS APPEAR TO BE MEETING THE NEEDS OF THE STATE POPULATION, (3) AT THE ELEMENTARY AND MIDDLE SCHOOL LEVELS, VERY FEW CAREER EDUCATION PROGRAMS ARE PROVIDED, AND (4) THERE CONTINUES TO BE STATE SUPPORT TO PREVIOUSLY CONCEIVED COUNCIL RECOMMENDATIONS. (SN)

THIRD
ANNUAL REPORT

New Hampshire Advisory Council
For Vocational Technical Education

1972

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NEW HAMPSHIRE ADVISORY COUNCIL
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February 1, 1973

Mr. William P. Bittenbender
Chairman of the State Board of Education
Deering, New Hampshire 03244

Dear Mr. Bittenbender:

Tagore once said: "I lose my way and I wander
I seek what I cannot get
I get what I do not seek."

In the past, much of education seems to have wandered into unprofitable areas, overpressing for a college education for all, losing sight, in many instances, of what its major goal should be and thereby becoming increasingly less relevant to its charge by Society.

Vocational Education seeks what it finds most difficult to attain - respect. Respect and equal status for its charter, its students, its teachers and its programs.

These points were clearly brought out in our First Report of 1970.

Hopefully, the concept of Career Education will be a major force in balancing out academic and vocational studies and bringing education back to a more unified, more constructive, more effective force.

Our past experience has shown that people become increasingly effective in direct proportion to their involvement. Vocational Education needs the support and encouragement of all in our State.

It is because of this fact that we have suggested an entirely new, almost revolutionary, concept - The Special Planning and Coordinating Summit Council. Its details are expanded in our Report. It would bring together the State's top policy-making bodies and individuals. Instead of all of us riding the horse in different directions, let's ride together.

In closing my third and last year as Chairman of the New Hampshire Advisory Council for Vocational-Technical Education, it is my hope that in the years ahead Mark Twain's comment: "I have never let my schooling interfere with my education" will have lost most of its sting.

Very truly yours,

Paul H Goldsmith

Paul H. Goldsmith
Chairman

PHG:sc:tc

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U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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GOAL I: Evaluation should focus on the State's goals and priorities as set forth in the State Plan.

The State's goals and priorities are reasonably well defined in certain areas; however, there are some areas that are vague in terms of needs throughout the State. The fact that some apparently key courses are being phased out indicates that somewhere along the line there exists a weak link in our informational systems. It should be a major goal of the education system to interest students in those courses where there are good employment opportunities. This could be accomplished through public relations both parent and pupil oriented; effective guidance; teachers who could inspire students to take courses and through some research with regard to the needs of business and industry. Closer coordination of agencies would provide a fair allocation of funds.

The goals and priorities of the State Plan were sufficiently comprehensive in terms of specific population groups.

Procedures were set forth in the State Plan to accomplish each stated goal.

The State has made accomplishments in vocational education over the past year. The Complete Occupational Education Development (COED) program was introduced in Keene. Enrollments in Health Occupations and Co-Op Education were expanded. Vocational programs have increased.

New staff has been added to the State Department of Education including a Consultant for Adult Education, Associate Educational Consultant and Administrative Assistant.

GOAL II: Evaluation should focus upon the effectiveness with which people and their needs are served.

An evaluation of the data in the State Plan on job opportunities and employer needs indicates the statistical data are not valid. A survey made by the Council substantiates this disagreement. However, the Council is aware of the fact that course offerings cannot always be decided by employment opportunities because of student interest and because of the lag in job information.

Business and Industry, the State Board of Education, the State Department of Education and the Legislature should

1. Talk to one another.

2. Develop and support more integrated and coordinated programs in the area of vocational-technical education.

Coordination of training opportunities among agencies needs constant attention by the State Department of Education.

Education should be an on-going process. Methods should be developed and improved in all post-secondary schools for giving credit for competency; for example, credit by exam, credit for on the job training, etc.

Curriculum changes should be made or other steps taken to keep students interested in vocational education.

Job placement of graduates by educational institutions is an area where considerably more could be accomplished. Placement of vocational students today is becoming a full-time job and perhaps we should be thinking about the addition of full-time placement people in our schools. Monies should be made available so that we can keep pace with the actual demands.

Although in the past vocational education was not involved in the total manpower development programs of the State, we see that progress is being made in this direction, and it is receiving attention on many levels.

Adult education programs appear to be meeting the needs of our State. They have shown a steady and marked increase in enrollment. It is hoped that the post-secondary institutions will continue to emphasize vocational-technical education.

The Council's opinion is that the major problem in our State is on the secondary level. A great deal of the success of the 1972 State Plan for Vocational Education depended upon the 20 Center Area Vocational School concept, and in many districts the concept in actuality has not lived up to expectations. Problems are cropping up all over the State, chief of which is the inability of the centers to accept students outside of their local school district because of lack of funds. Students are being turned away from vocational training. The State and the Citizens' Task Force have approved the concept of the area vocational center but have not worked to provide funds for its implementation. We can't expect the local district where the center is located to carry the financial burden of students outside its district. A MEANS OF OBTAINING FUNDS MUST BE FOUND. The Legislature as well as the State Board of Education must be made aware of the benefits of vocational education as well as the numbers served.

There are very few career education programs provided to elementary and middle grade pupils. There is only one structured program in existence in the State. Other programs are initiated by innovative individuals, but very little follow through exists. A structured program in career education K-12 would be instrumental in improving the image of vocational education and would teach the value of work and the satisfaction of a job well done. It would help alleviate the lack of student interest in courses where there would be job opportunities upon completion. Guidelines for these programs should be established at State level and passed down to the local school districts just as other requirements are recommended by the State.

The local districts are interested in receiving these guidelines so they can begin their programs in an orderly fashion. Many programs can be introduced into the present curriculum at minimal or no additional cost to the school system.

The Council has little basis for determining if the students feel that vocational programs are adequately meeting their needs. The State should investigate this area and

obtain data indicating how the students feel. This information should be obtained from students presently enrolled in vocational programs as well as graduates of the secondary and/or post-secondary programs.

GOAL III. Evaluation should focus on the extent to which 1970 and/or 1971 Council recommendations have received due consideration.

STATE PLAN

(1) 1971--We recommend a State Plan that contains goals and objectives easily recognized and understood by the general public. Such a plan will receive public support. National and State guidelines presently do not make such support feasible.

Action: An attempt has been made to improve the State Plan; however, the Council believes that efforts be directed towards simplification of the format and clearer definition of guidelines.

RECOMMENDATION

We recommend that individuals at the Federal level look into further modifications of the State Plan to make it a viable and working document. The State Plan should reflect the needs of our State and its people.

ATTITUDE

(1) 1970-71--We recommend that respect for work and of working with your hands, pride and dignity in doing a good job, and the honorable position once held by craftsmen must be reinstilled in our State.

Action: Our Council believes that some progress has been made in re-emphasizing respect for work and working with your hands. Career education will help greatly toward redignifying the honor and self-satisfaction gained by working with your hands.

(2) 1970-71--We recommend that school superintendents, vocational directors, and supervisors seek more consistently the assistance which can be provided by their State and Local Advisory Committees.

Action: Local advisory committees have become more active in the past year. The State Advisory Council has been involved in meetings with local groups. Communication with local advisory committees has been gained by the Council's effort of including them on our mailing list.

(3) 1970-71--We recommend that the State Department of Education - Division of Vocational Education - place on their staff a qualified Director of Public Information. The specific

duties of this office would be mainly directed toward preparing a state-wide campaign to change the attitude of second-class citizenry held towards Vocational-Technical Education. This office would also prepare films, programs, speeches, and articles for T. V., radio, and the press for State-wide promulgation to bring Vocational Education into perspective and give it the proper respect it deserves.

Action: A Public Information Officer was appointed. However, the position involves the entire State Department of Education and, therefore, he can devote only a small amount of his time to vocational education. It was hoped that at the time of the Council's original recommendation that the person's primary interest would be in vocational education. To change the image of vocational education requires careful, well-developed, long-range plans.

RECOMMENDATION

We recommend that a full-time Public Information Officer be appointed devoting his duties to vocational and career education.

FUNDING

(1) 1970-71--We recommend that more funding be provided on a national and state level. Vocational education is on the move, but it is still hampered by grossly inadequate funding. Elected officials should recognize that on the average 50% of our youngsters in secondary programs will not go on to higher education. Historically, they have been given the smallest share of local, state and national budgets. People have become more aware of the inadequacies of opportunities; they may become more so in the future--a fact political leaders should recognize.

Action: It is the Council's observation that appropriations of Federal and State funds on all levels of vocational education, but particularly State funds for secondary programs, are inadequate. Little has been done to increase funding of vocational education programs.

RECOMMENDATION

It is of definite concern to this Council that the State's funding of various programs within the structure of the educational system must undergo some revision. We should have a straight-forward appropriation of State funds for both operational and capital outlay expenditures; there appears to be too much administrative machinery to secure approval of current funding--in short, the system is too complex. Simplification of educational financing in our State is long overdue, and more flexibility is needed for overall growth and future development.

Realistic estimates and plans encompassing the various segments of our educational structure should be formulated and presented to the Legislature by the State Education Department. Emphasis of a higher degree than in the past should focus on vocational education at the secondary level including the area centers which were state designated in the very beginning.

(2) 1970-71--We recommend that we have a long-range, planned program of funding on state and national levels to systematically increase the amounts available to established and developing vocational-technical programs. We must take a hard look at programs that cost four times as much to retrain as they do to originally train youths and adults. The most economical way to teach skills and train competent workmen is in the formative years, utilizing the public educational system. We realize, of course, that some retraining programs will always be necessary.

Action: Money continues to be poured into retraining programs.

RECOMMENDATION

Large, new funding is not necessary. A redirection of present funds now placed in unprofitable areas of education and manpower training is all that is needed.

PROGRAMS

(1) 1970--We recommend that the State give consideration to the exploration of means of funding, initiating, and implementing new courses in the New Hampshire Vocational-Technical Colleges at the time the need is recognized and apparent.

1971--We recommend that all agencies should insure a program of research and development in training young people and adults that will provide facility and equipment needs required by up-to-date New Hampshire business and industry.

Action: Some progress has been made in insuring a program of planning and development in training young people and educators that will provide facility and equipment needs required by up-to-date New Hampshire business and industry.

RECOMMENDATION

We recommend once again that adequate Planning and Development programs be initiated by the State Board of Education to meet the needs of New Hampshire business and industry.

(2) 1971--We recommend that the trend to duplicate and dilute programming in terms of students, facilities, equipment and adequate funding be looked into. This would be a detriment to reaching goals desired in vocational-technical education in New Hampshire. Organizations, trustees and advisory committees should make every effort to avoid unnecessary duplication at the secondary, vocational-technical college/institute and UNH system programming.

Action: Some strides have been made in regard to the elimination of duplication of effort by the formation of the Mid-Management Group, which reviews programs offered in the vocational-technical college and university system. Constant attention should be given to avoid duplication of effort.

STATE DEPARTMENT OF EDUCATION

(1) 1970--We recommend that school dropouts be identified and motivated before they reach age 16 or the 8th grade. Statistics clearly show that a child who repeats more than one grade in elementary school has a 90% chance of becoming a dropout when he reaches age 16 or completes the eighth grade. Direct job-related instruction starting in the upper elementary grades should be available for these students.

Action: No known action to date.

(2) 1971--We recommend that local advisory committee members be appointed annually and also at time-of-replacement need to keep committee membership at full strength.

Action: There appears to be some improvement in updating local advisory committee membership.

(3) 1970-71--We recommend that the State Department of Education include a Consultant in the area of Industrial Arts within the Division of Vocational Education. Industrial Arts education accommodates one of the largest segments of secondary school student populations. This service is a necessity in the improvement of vocational education.

Action: The position of Consultant of Industrial Arts in the Division had not been filled as of June 30, 1972.

RECOMMENDATION

We again recommend that the State Department of Education appoint a Consultant in the area of Industrial Arts within the Division of Vocational Education.

(4) 1970-71--We recommend that in-service training seminars for guidance and administrative personnel be further developed to allow a broader, fuller appreciation of the problems of vocational education. This would afford an opportunity to exchange ideas and information with others in seminars, business and industry, special agencies and students.

Action: In-service training of guidance and administrative personnel has occurred in some sections of the State. We hope these programs will be continued and broadened.

(5) 1970-71--We recommend that a variety of sequential courses be made available by the university system to upgrade and expand vocational teacher education and training.

Action: Work is progressing on a system-wide Master's in Vocational Education Degree. Seminars have been held for beginning vocational teachers.

STATE BOARD OF EDUCATION

(1) 1970--We recommend that the State Board of Education set up a merit rating system to reward teachers for the ability to teach and motivate their students rather than the rigid, unproductive system of reward by number and kind of degrees held. This could be "in addition to" the present system.

Action: No known action taken to date.

(2) 1970-71--We recommend that the twenty secondary area vocational centers located strategically throughout the state be funded to provide ready access to any student wishing to participate in a vocational program.

Action: In the previous legislative session, funds were not appropriated for the Centers and presently there are 17 centers and 2 sub-centers designated.

RECOMMENDATION

We recommend that positive steps be taken to insure funding of the twenty area center vocational school concept. Such implementation can be the major answer to the secondary vocational education needs of the State.

(3) 1971--We recommend that training of guidance counselors include provisions so that they are knowledgeable in career education, including the world of work as it concerns business and industry. The basic job is guidance and direction for all students, not a selected few.

Action: Basic inroads have been laid out for the training of guidance counselors so that they might become knowledgeable in career education. However, due to lack of funding, not much has been done to accomplish their implementation.

RECOMMENDATION

Guidance Counselors should make a major effort to seek out local needs and requirements of local business and industry. This would give them a broader picture of what is going on within their community and perhaps aid them in their counseling activities.

(4) 1971--We recommend that the State of New Hampshire implement the suggestions of the 1970 Citizens Task Force Report regarding a separate and effective administrative apparatus to direct and govern the vocational-technical college/institute system.

Action: A separate and effective administrative apparatus to direct and govern the vocational-technical college/institute system had not been established as of June 30, 1972.

(5) 1970--We recommend that orientation to the world of work should be introduced in the early grades. Pre-vocational training, exposing students to the full range of occupa-

tional choices should be instituted in the junior high schools. This should include a continuing series of plant visitations by students, and school visitations by industrial representatives.

1971--That elementary schools seek answers to acquire a knowledge of career education and to provide more guidance and counseling in the lower grades to familiarize pupils with work and work opportunities.

Action: Pilot programs were established that will enable elementary schools to acquire knowledge and familiarize teachers with the career education concept and vocational-technical education's place in it.

RECOMMENDATION

We recommend that Workshops in Career Education be offered for all educators.

(6) 1971--We recommend that a system be introduced which would allow for programs fluid enough to move from place to place where the need exists in a particular area.

Action: Little has been done to provide programs fluid enough to move from one location to another where the need exists in a particular area.

(7) 1971--We recommend that the State Board of Education:

1. Study the need for mandatory introduction of basic courses in economics and the Free Enterprise System in all public elementary schools.

2. Study the need for additional training of teachers to instruct in this area.

Action: No known action taken to date.

RECOMMENDATION

Preparing youngsters for the 'World of Work' without giving them a true appreciation and understanding of how our business system operates seems a bit like driving a car with blinders on. It is paramount that some simple, basic courses showing how our Free Enterprise System works be taught in our Elementary grades.

(8) 1970--We recommend that consideration should be given to the comprehensive or regional type of high school. Students should have multiple choices within high schools. They should be allowed to move into and out of vocational-technical programs and to select mixtures of vocational-technical and academic courses. Each student who so desires should be taught some saleable skill.

1971--We recommend that the necessary changes be made so that all public school children be allowed a flexibility of choice in curriculum in the secondary schools. "Tracking,"

giving students a 'no choice' decision of subjects or programs, is undemocratic, unproductive and undesirable. It stifles career opportunity and growth and should be avoided.

Action: We observe that the practice of restricting students to select courses within a tracked system is being gradually discontinued but, even if this inflexibility exists in one school, it is one school too many.

Factors which influenced the failure of the implementation of the above recommendations were

1. Lack of funds from the Legislature specifically for secondary programs, especially since the Legislature can vote programs in or out.

2. Failure of people who should be concerned to read and study the recommendations and take appropriate action.

3. Some programs take longer than a year to implement.

Some of the recommendations were implemented because of the effort of the Division of Vocational Education as well as the effort of interested and concerned citizens.

FOLLOW THROUGH BY COUNCIL

The New Hampshire Advisory Council for Vocational Technical Education has beer involved in many facets of vocational education. It has

1. Held three public meetings in 1971-72, in Manchester, Dover and Whitefield.

2. Toured secondary and post-secondary schools. This included the New Hampshire Vocational-Technical College in Portsmouth, Dover High School, White Mountains Regional High School and the Automotive and Distributive Education programs at Littleton High School.

3. Worked with the New Hampshire Business and Industry Association.

4. Has been represented on the Professional Development Advisory Committee through its Executive Director.

5. Prepared, mailed and tabulated a questionnaire which was sent to over a thousand individuals including the entire State Legislature and members of the Business and Industry Association. A separate report of this study will be published by the Council.

6. Mailed out over 3,000 copies of the 1971 Annual Report. Mailing lists included the State Legislature and the members of the State Board of Education.

7. Been in close contact with the State Department of Education, Division of Vocational Education, through its Executive Director.

8. Published a monthly newsletter.

9. Been instrumental in strengthening the New Hampshire Vocational Association.

10. Been represented at local advisory committee meetings by its Executive Director, including those held at Salem and Exeter.

11. Met with the Local Directors of Secondary Education.

12. Made periodic visits to our Senators and Congressmen in Washington to keep vocational technical education problems and programs before them and to try to solve questions which they might have. This action is supplemented with phone calls, personal letters and telegrams.

1972 RECOMMENDATIONS

FUNDING

The Federal program of excess property has made available more than $100 million for vocational-technical education programs throughout the United States. It has come to the attention of the Council that New Hampshire and all other states will be denied the right to excess property. Such action would prove detrimental to vocational education.

(1) WE RECOMMEND that the Federal program of excess property availability to vocational education programs be restored.

STATE DEPARTMENT OF EDUCATION

Films promoting vocational and career education should be an important part of a vocational education public relations program. Films produced in the past did not depict the true meaning of vocational education and are not as effective as they could be. Recently, films have been produced by Business and Industry which are available to the State and local education departments. These films are well done and current.

(1) WE RECOMMEND that films available from Business and Industry be looked at by the State Department of Education for use in promoting career and vocational education.

It is important that students trained in our school system be placed in jobs in our State in the fields for which they have been trained. Placement facilities should be expanded to give students the confidence and know how of applying for a job and to put them in contact with potential employers. A student who receives a good job after training in our schools is the best advertisement for our vocational education system. Too many students who are trained for entry level positions are working in unrelated fields. There is some placement on the post-secondary level.

(2) WE RECOMMEND that the area of job placement for graduates be investigated.

If we are to maintain momentum in our vocational system, Education must co-operate with Business and Industry. We are depleting our "people inventory" in some areas (machine tool trades and associated fields for example) and we must establish a new and proper foundation to prevent this from happening once again.

We must find a way to instill in our young people the advantages of trades that are regarded as highly skilled professions and require a degree of proficiency in subject matter that demands additional training beyond the secondary level. The schools on the other hand may have to broaden their outlook on teaching newer and more sophisticated subject matter.

(3) WE RECOMMEND that Education co-operate with Business and Industry both locally and statewide in determining the manpower needs of job opportunities for the future.

RED JACKET REPORT

In December, 1971, at the request of the State Board of Education, Subcommittee on Post-Secondary Education, the Directors of the Vocational-Technical Colleges and the Technical Institute filed a report called the RED JACKET REPORT.

The mission of the Directors was to determine the concept of the future role of their system.

We were surprised and disturbed by the following:

1. We learned of the Report by accident.

2. The recommendations of the Directors are in diametric opposition to what we think the charter of the Vocational-Technical Colleges should be.

Are they in danger of becoming too selective and too academic?

The following quotations from the Report are offered as evidence for our misgivings:

Under the paragraph, Mission, the Directors state that "...it was agreed that the expansion of the present system into a system of comprehensive community colleges would be the best future role.

"Further it was the feeling of the Directors that the present offerings within the post-secondary vocational-technical system parallel, with few exceptions, the programs of the general comprehensive two-year college."[1]

A comment might be worthwhile here. It has been observed not only by this Council but also by Dr. Sidney Marland, U. S. Commissioner of Education, that many of the programs and subjects offered by higher learning have been out of touch with the real world and that much of its teachings have lost relevancy.

Again to quote from the Report:

"In 1966 the New Hampshire Junior College Commission made the following recommendation: 'to create a network of comprehensive junior colleges the Commission recommends that the technical and vocational schools, now being operated and to be built, gradually be converted to comprehensive junior colleges by incorporating junior college curricula in them.'[2]

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[1]Red Jacket Report, Page 1, Paragraphs 2 and 3, underlined by Council Members.
[2]Ibid, Page 9, Paragraph 3, underlined by Council Members.

"In 1968 the Directors of the Vocational-Technical Colleges and Technical Institute held a meeting in Concord with Mr. Andrew and Mr. Green and at that time clearly went on record as favoring the establishment within the present colleges and Technical Institute a system of comprehensive junior colleges. The minutes of the meeting are in the appendix."3

At this point, it should be emphasized and clearly understood that we have no objection whatsoever to the concept of Community Colleges in New Hampshire. We heartily endorse and recommend that the facilities of the Vocational-Technical Colleges and the State Colleges be utilized to their fullest by one another. We see no reason at all why programs and subjects from higher education should not be offered at the Vocational-Technical Colleges as long as such activity does not interfere with the Colleges' regular programs.

Looking a few years ahead, we do, however, express concern from the thrust of the Report, and statements of the Directors themselves, that the Vocational Colleges might be in danger of losing their identity, their mission and thereby their charter. They could be assimilated slowly but inexorably by academicism. Their's would be a hazardous tightrope to walk indeed.

We fear this, not only because of higher education's past attitude toward vocational education, but also because an axiom applies here that was pointed out so well by Humpty Dumpty in Through the Looking Glass, "When I use a word,' Humpty Dumpty said, in rather a scornful tone, "it means just what I choose it to mean - neither more, nor less.'

"The question is,' said Alice, 'whether you can make words mean so many different things."

"The question is," said Humpty Dumpty, "which is to be master - that's all.'

(1) WE RECOMMEND that the word "Vocational" be retained in the names of the Vocational-Technical Colleges and that no attempt be made to divert them from their original purpose and charter.

NEW HAMPSHIRE ADVISORY COUNCIL FOR VOCATIONAL TECHNICAL EDUCATION

Since the Council is concerned that our Report has not received due consideration in the past,

(1) WE RECOMMEND that this year Council members visit with organizations throughout the State and inform them of the content of our 1972 Annual Report and request their assistance in achieving its implementation.

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[3] Ibid, Page 9, Paragraph 4.

SUMMIT COUNCIL

Many good things have been accomplished in the Vocational-Technical areas. With the advent and special emphasis that Career Education is now receiving, this progress should continue.

To save time, duplication of effort, and to establish a more unified, more effective direction, we think that the time is now most propitious for a Special Planning and Co-ordinating Summit Council to be established.

We suggest that this Council be made up of only the top state educational agencies, boards and directors, the State Legislative Subcommittee Chairman assigned the responsibility for directing and coordinating such activities, and the Chairman of the New Hampshire Business and Industry Subcommittee on Education whose interest, support and participation is vital to the final success of any Career Program. The Advisory Council would act as a catalyst for the group. It is hoped that this group would meet at least twice a year initially.

One, or more, members should be represented from each of the following groups or activities:

1. State Board of Education
2. University Board of Trustees
3. State Legislative Committee on Education
4. State Commissioner of Education
5. New Hampshire Business and Industry Committee on Education
6. State Advisory Council for Vocational-Technical Education

We think this pivotal group, by working together, out of their normal operational spheres, can make a truly significant contribution to Career Education, the State of New Hampshire, and, most important, more quickly open opportunities heretofore unavailable to many of New Hampshire's youngsters.

SUMMARY STATEMENT

The Council believes that the following recommendations, already mentioned above, should be given top priority in the order listed:

1. That positive steps be taken to insure funding of the twenty area center vocational school concept. Such implementation can be the major answer to the secondary vocational education needs of the State.

2. That the word "Vocational" be retained in the names of the Vocational-Technical Colleges and that no attempt be made to divert them from their original purpose and charter.

3. It seems clearly apparent to us that the Special Planning and Co-ordinating Summit Council will become one of the most influential, effective and successful forces for Vocational-Technical Education. We hope the idea meets with favorable response.

4. Preparing youngsters for the 'World of Work' without giving them a true appreciation and understanding of how our business system operates seems a bit like driving a car with blinders on. It is paramount that some simple, basic courses showing how our Free Enterprise System works be taught in our Elementary grades.

5. Large new funding is not necessary. A redirection of present funds now placed in retraining is all that is needed.

6. That Education cooperate with Business and Industry both locally and statewide in determining the manpower needs of job opportunities for the future.

This THIRD ANNUAL REPORT of the New Hampshire Advisory Council for Vocational-Technical Education to the U. S. Commissioner of Education and the National Council through the Chairman of the New Hampshire State Board of Education is submitted in compliance with Public Law 90-576, The Vocational Education Amendments of 1968.

MINORITY REPORT

The following is a Minority Report which refers to pages 12 and 13 of the Report beginning with the section entitled "RED JACKET REPORT."

Paragraph #2 is an extraction indefinite unless accompanied by information on pages 3, 4, and 5 of the Red Jacket Report. The report is based on a study of nine separate commissions and former studies of 2-year post-secondary education in New Hampshire from 1963-1971. The definition, planning assumption and definition of community colleges are the Directors' response to these nine commission reports as requested by the State Board, Sub-Committee on Vocational-Technical Education.

Paragraph #3 - Statement #1 is false. A member of the Council informed the Council of the report more than two years ago. Since the Report was at the request of the Sub-Committee of the State Board and a report to them, they exercised their prerogative of releasing and/or printing of the contents.

This investigation of nine commission reports resulted in the October 1971 New Hampshire Advisory Council Report under Programs - #3, i.e., "New Hampshire could not afford - to have a plethora of 2-year post-secondary institutions."

A study of the Red Jacket Report, available to those in the majority report, lists all the long-range program planning of the six vocational-technical colleges. This listing is worthy of further majority group study since it answers their questions.

Paragraph #4 - 'Too academic and too selective' is answered in the freshmen class profiles sent to each council member the past three years. It would appear research is poor or interpretation is poor since they show consistently 60% of entering freshmen come from the lower 3/5ths of each class standing.

It is a majority opinion not based on substance/investigation. This information can be obtained at each institution if proper and efficient data collection was a desirable route before making a statement.

Paragraphs #6, #7, and #8 - The answer to Footnote 1 should also include nine commission/report conclusions, i. e., New Hampshire cannot afford a profusion of 2-year institutions competing for buildings, equipment, monies and, most important, the same segment of population. RATHER SOME THOUGHT SHOULD BE GIVEN TO MAKE BETTER USE OF PRESENT FACILITIES.

A study of comprehensive institutions throughout the United States does indicate the statement in Paragraph #7 is true. Could it be the majority report conclusion did not include a study of definition or make a comparison of programs of study? Did the report define as in Title X Community Colleges and Occupational Education, Section 1018 and Section 1060?

It would appear a published report should receive in-depth research in voicing minority or majority personal opinions.

It would appear a part of research should be personal contact with existing New Hampshire agencies before making broad, inconclusive statements, that is basically a reading interpretation of a single report. We would ask, 'Was this subject broached personally to (1) Chief, Post-Secondary Division, State Department of Education, or (2) Chairman, Sub-Committee on Vocational-Technical Education, State Board of Education?'

Since this is important enough for a majority report in a published evaluation under the name of the New Hampshire Advisory Council, some attempt at valid research should be made.

Beginning with 'Again to quote from the Report:' page 12, considered as Paragraph 1 and then on to Page 13, the following comments apply:

Paragraphs #1 and #2 - It would appear that in 1966 and 1968 some New Hampshire studies they quote had research enough to have vision of what would happen in 1973 and beyond. Witness the growth of two-year education on a comprehensive level and Federal recognition through Title X of Public Law 92-318. As an example: Would the majority members approve a two-year liberal arts college be built in the North Country for 40-80 students in an area that graduates 900-1,000 each year with a total adult population of under 50,000? Would this duplicate, at great expense, buildings, administration, staff, other expenses? Or would the majority members suggest New Hampshire spend its money wisely by adding a 14th curricula to its existing buildings, facilities, equipment, supplies, extra curricula activities, etc. by adding 2-3 teachers? Or would the majority members say let's make it a big issue of mixing mechanics and academicians and some 40-80 North Country youngsters be denied this kind of education?

Our conclusion as to the remainder of the comments is the Red Jacket Report is the major research source and the nine commission reports were not perused. Unless this research is undertaken thoroughly, no amount of quotations from a well-known fairy tale, supported by personal interpretations, should appear in an evaluation report from responsible Council activity.

The last paragraph appears to be a particular hang-up of some council members? It suggests a name change is done furtively and secretly. It does not say the State Board and State Legislature make such suggestions/changes. It does NOT STATE published statements from the State Board. The following is an example from as late an issue as January 25, 1973, of the Coos County Democrat, Lancaster, New Hampshire:

> GORHAM -- The New Hampshire State Board of Education held a regular meeting at Berlin H. S. . . .
>
> * * * *
>
> Mr. Sweeney seemed adamant in the Board policy that the voc-tech colleges not become junior colleges but remain commuting vocational-technical colleges. . . .
>
> * * * *

It would appear the majority report group and the Council should be more concerned with University system activity in 2-year programming,[1] as a more immediate threat to their ideas on vocational-technical education. This philosophy of education was also brought to Council attention two years ago and in the 1971 Council Report it was emasculated to a comparatively minor statement.

We, as an extreme minority, are concerned that items are published that have not had sufficient research and questioning. It would take time and effort, but to inject crucial statements without this effort in a purported evaluation indicates a questioning of effectiveness and credibility of the total Council activity. To be effective the Council must have credibility. To be credible it must work on substance and research of a high order. To lessen credibility and lessen Council effectiveness, it can publish material that will harm not only a system, or a particular institution, but people, because it is based on inconclusive study and research.

To us such a report published for not only New Hampshire distribution but to other states and Federal agencies will definitely show we do not know what other states do and recognize as meeting needs for training in a variety of occupations.

In conclusion, we would ask the majority members:

-Do you know in 1963 the N. H. Advisory Committee said the purpose was to teach for the trade and technical fields?

-Do you know the same group recognized need for change and in later years introduced health occupations and business occupations?

-Would the majority members suggest no need to study changes/development as society needs change. Or do they have other reasons of a parochial nature as an argument base? We would submit either case, either side, should have concrete and substantial evidence as a basic need prior to making a decision.

Submitted by: Edward C. Oleson
Frederick C. Walker

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[1] Keene State College Alumni Newsletter, 'Career Studies Head Sought for College,' January, 1973

VT 019 660

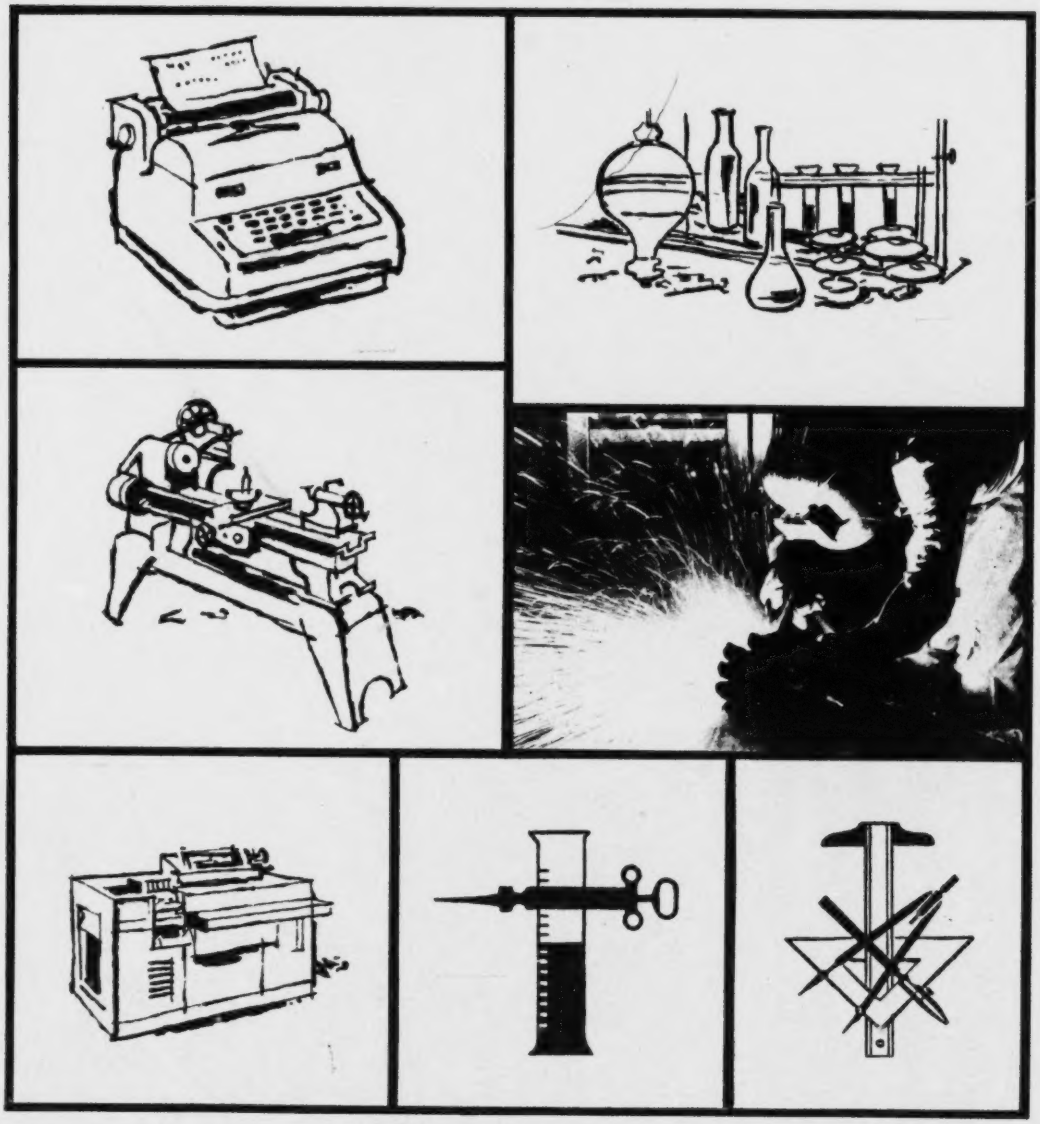
VT 019 660
WARD, DALE E.
FOCUS ON CAREER EDUCATION GUIDANCE AND COUNSELING (K-14). SECOND ANNUAL REPORT.

OREGON STATE GOVERNOR'S ADVISORY COUNCIL FOR VOCATIONAL EDUCATION, SALEM.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 22OCT71 20P.

DESCRIPTORS - ANNUAL REPORTS; ADVISORY COMMITTEES; *PROGRAM EVALUATION; VOCATIONAL COUNSELING; *GUIDANCE PROGRAMS; GUIDANCE SERVICES; GUIDANCE COUNSELING; *COUNSELOR TRAINING; *COUNSELOR QUALIFICATIONS; *COUNSELOR ROLE; COUNSELOR CERTIFICATION
IDENTIFIERS - *OREGON

ABSTRACT - THIS REPORT SUMMARIZES THE RECOMMENDATIONS AND CONCLUSIONS OF THE OREGON VOCATIONAL ADVISORY COUNCIL IN REGARD TO THE LEVEL OF CAREER GUIDANCE AND COUNSELING BEING PROVIDED THROUGHOUT THE STATE. DATA USED IN ASSESSING THE STATUS OF THE PROGRAM WERE OBTAINED FROM INVESTIGATIONS CONDUCTED BY SEVERAL OREGON AGENCIES. FINDINGS INCLUDE: (1) GUIDANCE AND COUNSELING PERSONNEL ARE EXPENDING A SIGNIFICANT AMOUNT OF TIME IN THE PERFORMANCE OF NON-GUIDANCE FUNCTIONS, (2) SCHOOLS ARE PROVIDING LESS THAN FULL GUIDANCE SERVICES, (3) COUNSELOR CERTIFICATION IS A PROCESS WITHOUT MEANING OR APPLICATION TO TODAY'S CAREER EDUCATION NEEDS, AND (4) FORMAL TRAINING OF GUIDANCE AND COUNSELING PERSONNEL THAT IS NOW BEING OFFERED IS NOT SUITED FOR TODAY'S CAREER EDUCATION NEEDS. RECOMMENDATIONS INCLUDE SUGGESTIONS FOR REDESIGNING THE COUNSELOR CERTIFICATION AND TRAINING INSTITUTES AND A CONTINUOUS SELF-EVALUATION OF GUIDANCE PERSONNEL. (SN)

SECOND ANNUAL REPORT
of the
GOVERNOR'S ADVISORY COUNCIL FOR VOCATIONAL EDUCATION



FOCUS: On Guidance and Counseling in Oregon's Schools

VT019660

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TOM McCALL
GOVERNOR

TOM SLOAN
Chairman

October 22, 1971

Mr. Frank J. Van Dyke, Chairman
State Board of Education
942 Lancaster Drive, N. E.
Salem, Oregon 97310

Dear Mr. Van Dyke:

The Governor's Advisory Council for Vocational Education, created by the U. S. Congress through the Vocational Education Amendments of 1968 and by Executive Order of Governor McCall, dated February 18, 1970, hereby submits its second annual report.

The scope of the Council's charge to evaluate vocational education programs in the state of Oregon was felt to be too broad to be effectively discharged with limited resources available to the Council. Accordingly, the Council has focused its 1971 evaluative efforts on Guidance and Counseling in Oregon's Schools. The Council feels the decision to narrow its evaluation is a positive step for vocational education in Oregon.

Also, and in keeping with its charge, the Council has made recommendations concerning career guidance and counseling in Oregon. First, in the area of providing full guidance and counseling in Oregon's schools, and second, in the means for evaluating the effectiveness of these services.

To facilitate the exploration of full guidance and counseling services, we have suggested a model for discussion. To assist in the development of means for future evaluation of career guidance and counseling, we have included in our report a suggested format which may serve career guidance and counseling personnel in a process of self-evaluation. Both are hereby presented for further exploration by appropriate agencies and personnel.

Sincerely,

Tom Sloan, Chairman

TS/iw

Our First Annual
Evaluation Stated . . .

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

"Guidance and Counseling are grossly inadequate at both the elementary and secondary levels."

This year, we have evaluated the basic functions of Career Education Guidance and Counseling Service in Oregon's Schools.

Focus on Career Education
Guidance & Counseling (K-14)

Prepared By:

Dale E. Ward, Special Consultant
Portland, Oregon
In
Consultation With
The Advisory Council Staff

2363

SUMMARY AND RECOMMENDATIONS

Summary Statement

THE COUNCIL ADDRESSED ITSELF TO THE LEVEL OF CAREER GUIDANCE AND COUNSELING PROVIDED THROUGHOUT THE STATE AND COMPARED THE RESULTS WITH THE MODEL. IN SO DOING, IT HAS JUDGED:

1. Oregon Guidance and Counseling personnel to be expending a significant amount of time in the performance of non-guidance functions.
2. Oregon's schools to be providing less than full guidance services.
3. Counselor certification to be a process without meaning or application to today's career education needs.
4. Formal training of guidance and counseling personnel to be incomplete for today's career education needs.

THIS EVALUATION WAS CONDUCTED IN A SPIRIT OF COOPERATION AMONG SEVERAL AGENCIES. IT IS HOPED THAT THE RECOMMENDATIONS PRESENTED WILL BE IMPLEMENTED WITH THE SAME SPIRIT, UTILIZING AS A BASIS FOR IMPLEMENTATION, THE GUIDANCE MODELS PRESENTED IN THE REPORT.

Recommendations

1. **Counselor certification should be redesigned to serve today's career education needs.** The establishment of guidance certification requirements should encompass the full range of career guidance services. It should acknowledge the variety of experiences required to properly serve in a guidance role, regardless of where or how these experiences are acquired. The process should also acknowledge the differing requirements of the following:

   Career Awareness (K-6)
   Career Exploration (7-10)
   Career Clusters (11-12)
   Career Specialization (13-14)

2. **Training institutes and organizations should redesign their programs in accordance with new counselor certification requirements.** The newly constructed programs should have as their primary goal the training of guidance personnel to a level of competency that will allow each to function effectively at his assigned level.
3. **Oregon citizens should have access to a full range of career guidance and counseling services.** Wherever possible, Oregon's schools (K-14) should house this service in order to serve the population in greatest need of the services. It is recognized that not all schools will have a staff large enough to provide the full range of services recommended. In this event, the Oregon Board of Education should recommend alternative plans to provide for these services.
4. **Guidance personnel should adopt a procedure for the continuous evaluation of their service to others.** Wherever possible, the process of evaluation should employ the concept of self-evaluation.

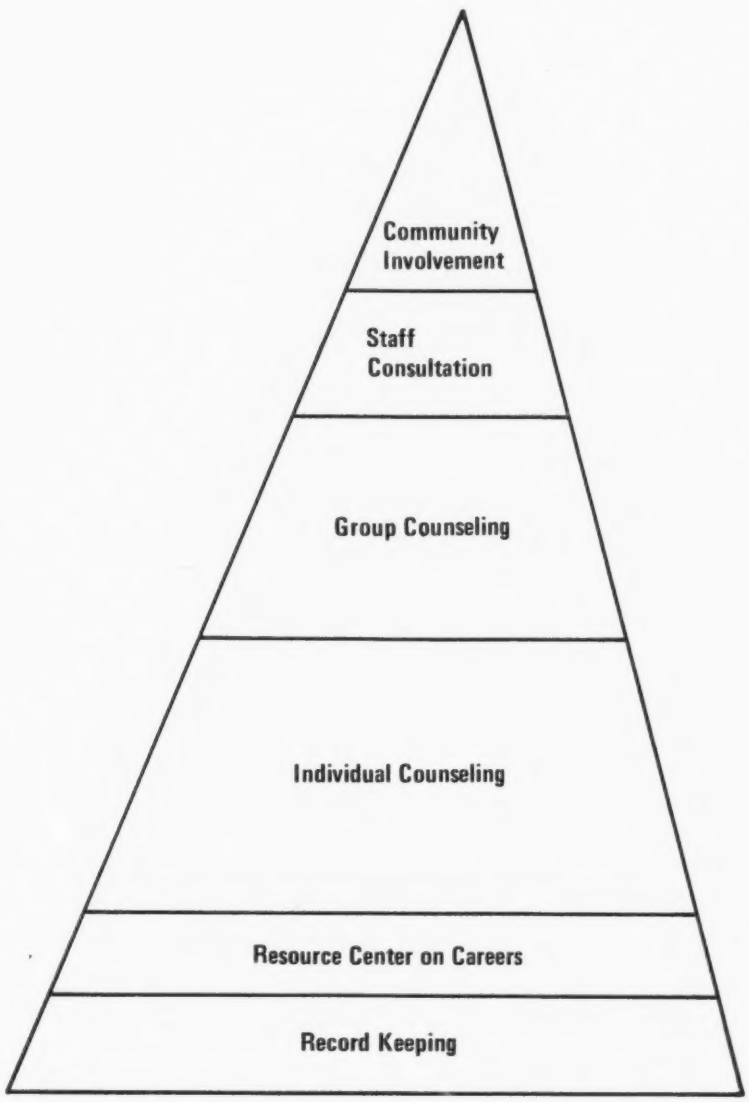
A GUIDANCE MODEL

This model shows the full range of guidance and counseling services that should be available to Oregon citizens. The model has been graphically reproduced throughout the report to illustrate the results of the Council's evaluation and its recommendations.

Full Range of Guidance and Counseling Services:

1. **Community Involvement**—Involves school guidance personnel in such things as the coordination of the career guidance services of other social service agencies in the community with the guidance services of Oregon schools; placing students in occupations as part of the learning process; and, involving the community in decisions effecting students.
2. **Staff Consultant**—Involves school guidance personnel in such things as the training and utilization of school teachers and administrators in guidance roles and consulting with this staff on matters relating to career instruction and services.
3. **Group Counseling**—Involves school guidance personnel in such things as the organization and conduct of group sessions with students on matters of interest to all students.
4. **Individual Counseling**—Involves school guidance personnel in such things as personal counseling with students about educational and vocational related problems as well as special problems with home, school and friends. The special problems need not relate directly to the students' responsibilities in school.
5. **Resource Center on Careers**—Involves school guidance personnel in such things as the collection and dissemination of information on occupations and advanced training. Also includes services related to the development of a personal resume, participating in an employment interview, and other procedures related to finding and getting the right job.
6. **Record Keeping**—Involves school guidance personnel in such administrative and clerical functions as supervising student records, scheduling classes, maintenance of attendance records and gathering and filing data.

A pyramid of activities based on comprehensive records and culminating in community involvement.



FULL RANGE GUIDANCE AND COUNSELING

This model was developed in consultation with Les Adkins, Director, Student Services, Oregon Board of Education.

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PART I **EVALUATION**: A LOOK AT TODAY'S CAREER GUIDANCE AND COUNSELING IN OREGON

- — COUNSELOR TRAINING
- — COUNSELOR CERTIFICATION
- — COUNSELOR STATUS

PART II **WHAT NOW**: THE RANGE OF FULL GUIDANCE AND COUNSELING SERVICES REQUIRED TO MEET TODAY'S CAREER EDUCATION NEEDS

- — CAREER AWARENESS (K-6)
- — CAREER EXPLORATION (7-10)
- — CAREER TRAINING (11-12)
- — ADVANCED CAREER TRAINING (13-14)

PART III **EVALUATING FUTURE COUNSELOR TRAINING AND SERVICE**: A MEASUREMENT OF THE CAREER GUIDANCE TRAINING AND SERVICE

REPORT SUPPLEMENT (Published Separately)

APPENDIX A PROFESSIONAL COUNSELOR SKILL LEVELS for awarding certification

APPENDIX B PROFESSIONAL COUNSELOR PERFORMANCE REQUIREMENTS for measuring performance on the job

INTRODUCTION

The Oregon State Advisory Council for Vocational Education directed its evaluation to a single area this year rather than to dissipate its resources across a broadly diversified front. Before selecting the area of guidance and counseling as its main focus, the Advisory Council consulted with other agencies and individuals about the many career needs which were identified in its first annual report and deserved attention.

For their counsel and cooperation in the preparation of this report, the Council gratefully acknowledges the assistance of:

The Oregon State Board of Education
The Oregon Educational Coordinating Council
The Northwest Regional Educational Laboratory

2368

PART I

EVALUATION

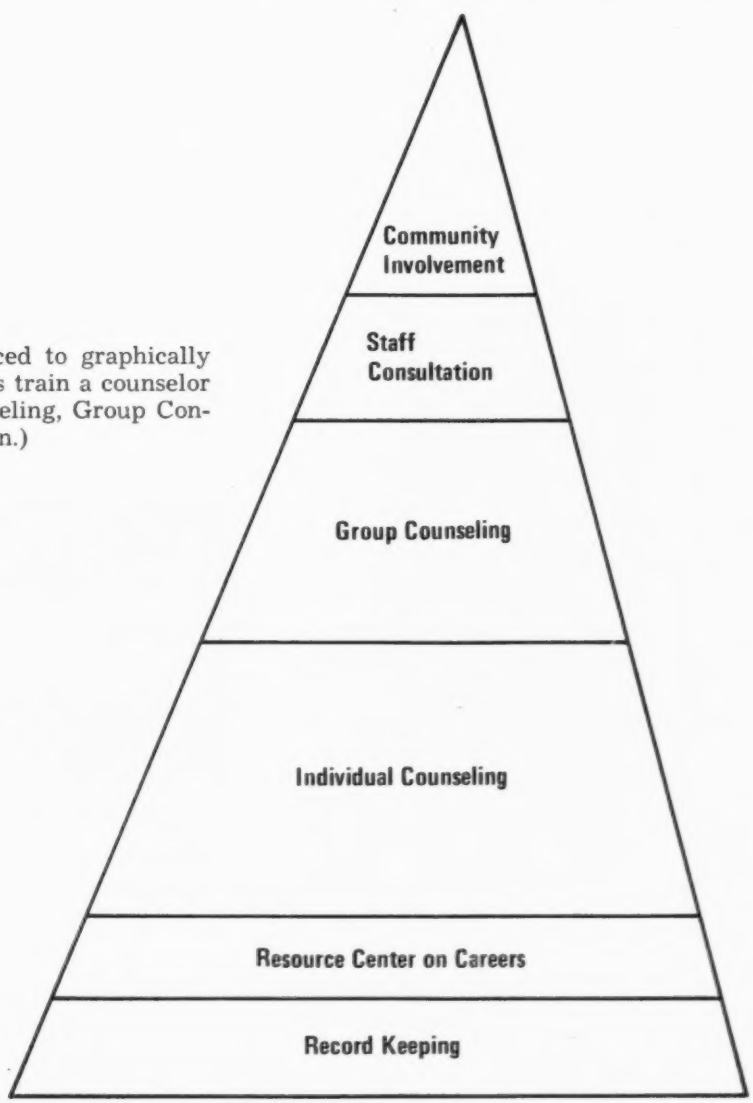
Training

Counselor training programs are based on certification requirements and counselor certification in Oregon reflects minimum standards for only part of a full range of guidance services.

Result

Training of guidance and counseling personnel in Oregon is incomplete for today's career education needs.

(The model would be reproduced to graphically illustrate that training programs train a counselor to function in Individual Counseling, Group Consultation, and Staff Consultation.)



Counselor training emphasis by category

FULL RANGE GUIDANCE AND COUNSELING

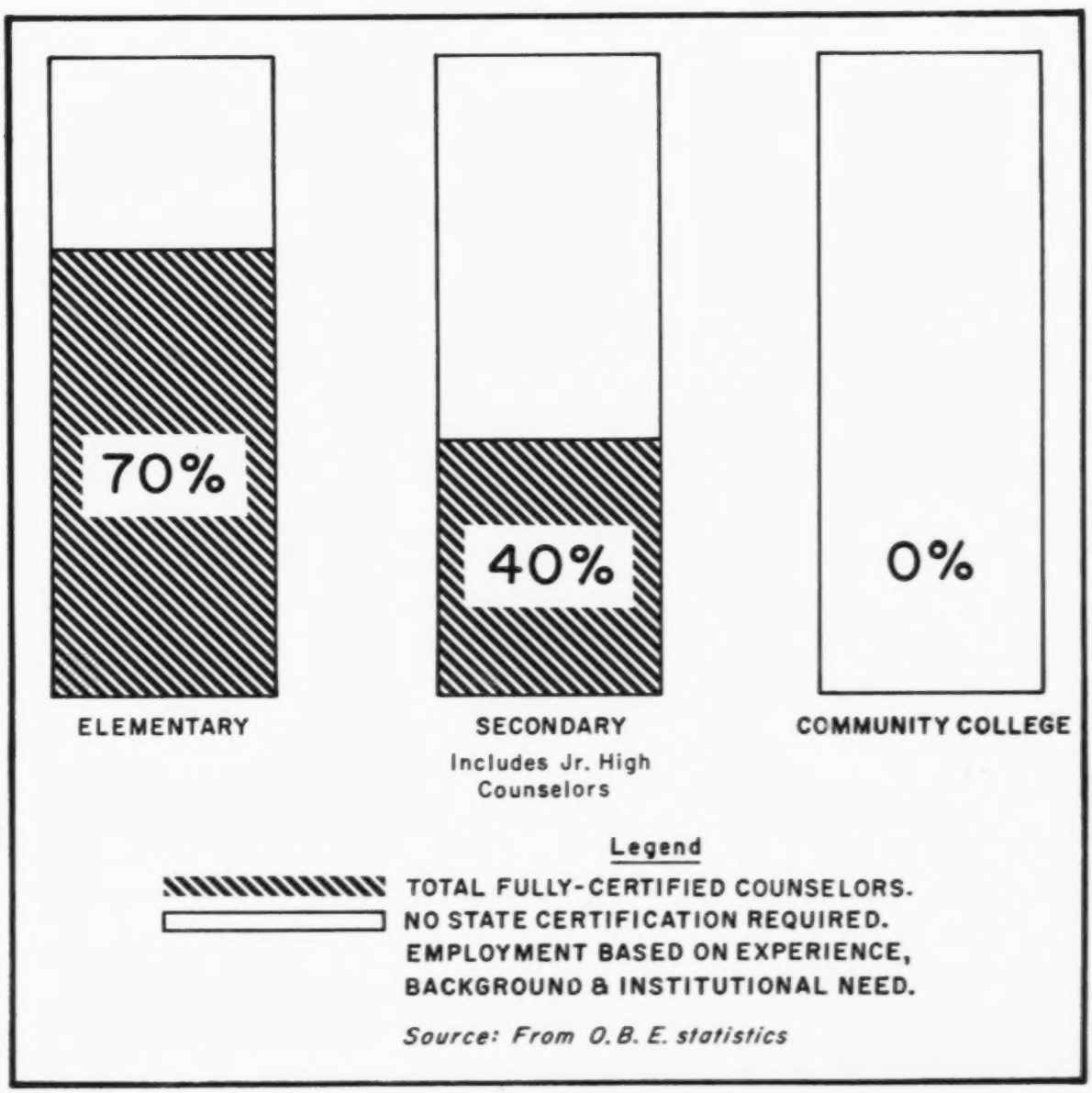
Certification

Counselor certification as a means for insuring quality control, is only periodically applied and only periodically applies to today's career education needs.

Result

Less than half of Oregon guidance and counseling personnel are certified. Counselor certification in its inapplication has failed to insure the recruitment and maintenance of high quality personnel.

(Graphic illustration of percentage of counselors certified K-8 and 9-12; also graphically illustrates 0% of certified counselor 13-14 because certification not required.)



Current Status

From a recent survey* of Oregon school counselors (K-12) conducted by the Oregon Board of Education, it was determined that counselors

— serve in those areas for which they have been trained

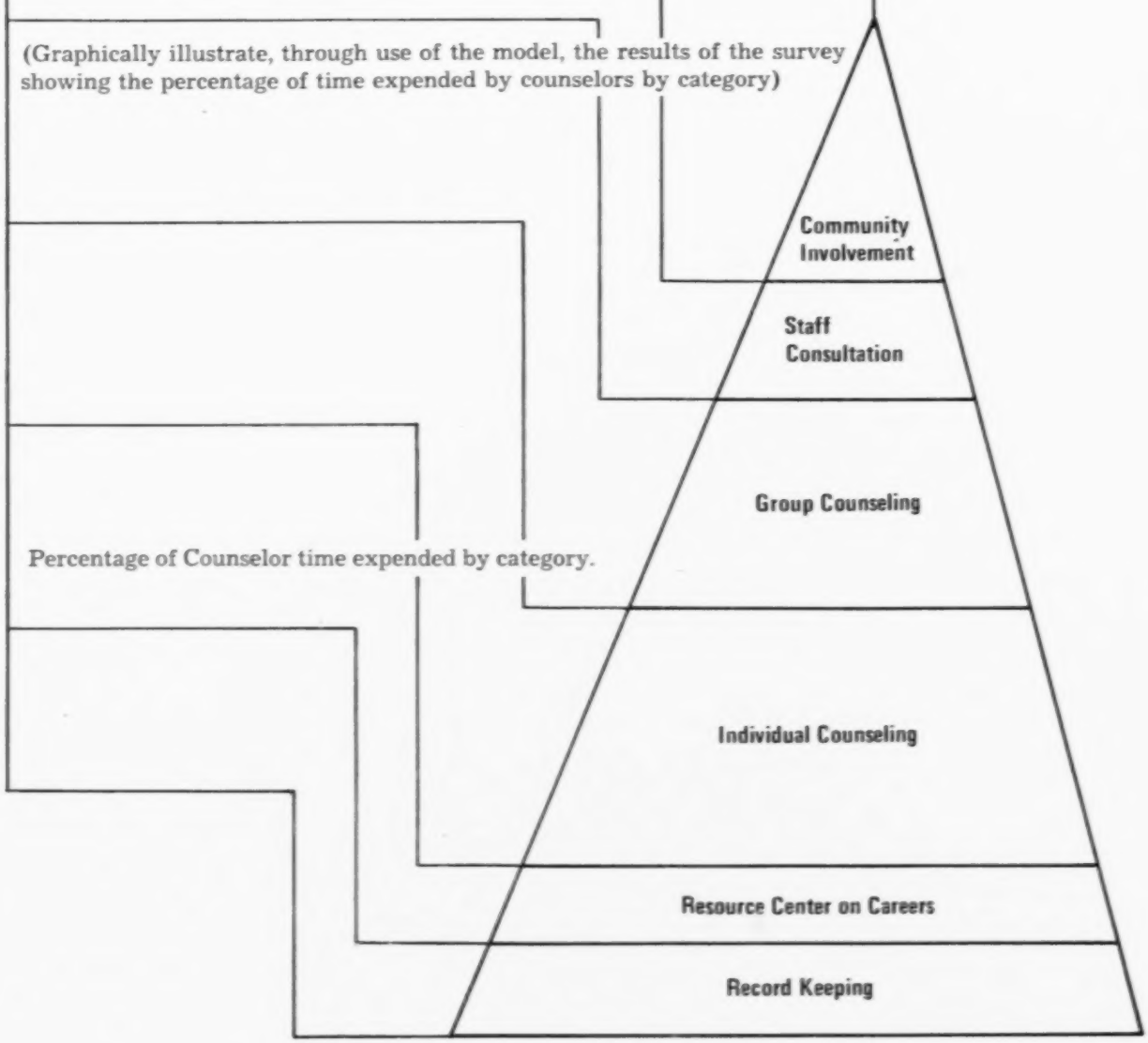
— are assigned and perform non-guidance functions

Result

Full guidance services in Oregon schools are the exception rather than the rule.

(Graphically illustrate, through use of the model, the results of the survey showing the percentage of time expended by counselors by category)

Percentage of Counselor time expended by category.



FULL RANGE GUIDANCE AND COUNSELING

* Interpretation of survey results conducted in consultation with Les Adkins, Director, Student Services, Oregon Board of Education.

PART II

If Oregon's counselor certification and training programs are to find, in redesign, a means of training/retraining its guidance personnel, it must first define the tasks and priorities related to the following:

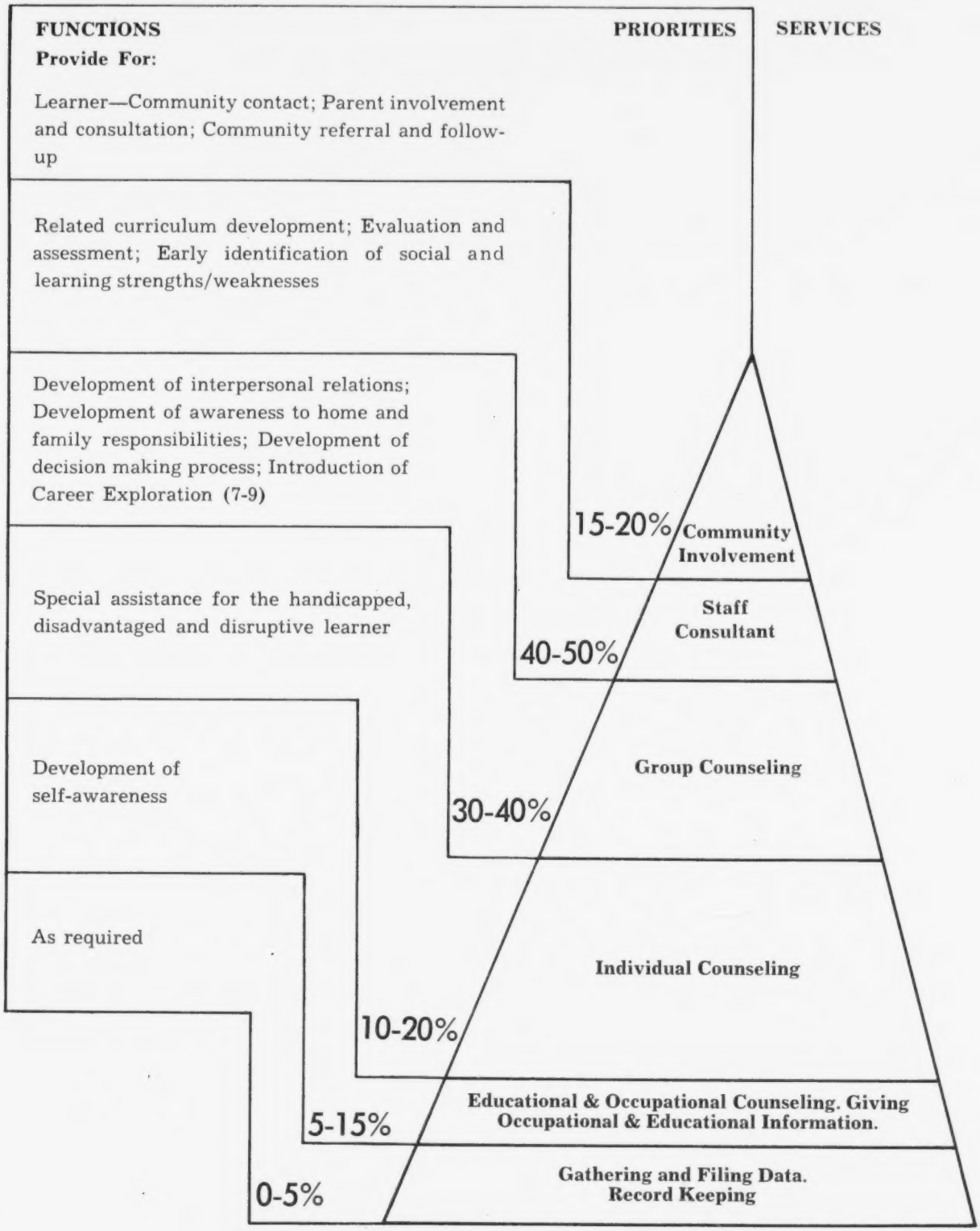
CAREER AWARENESS (K-6)

CAREER EXPLORATION (7-10)

CAREER CLUSTERS (11-12)

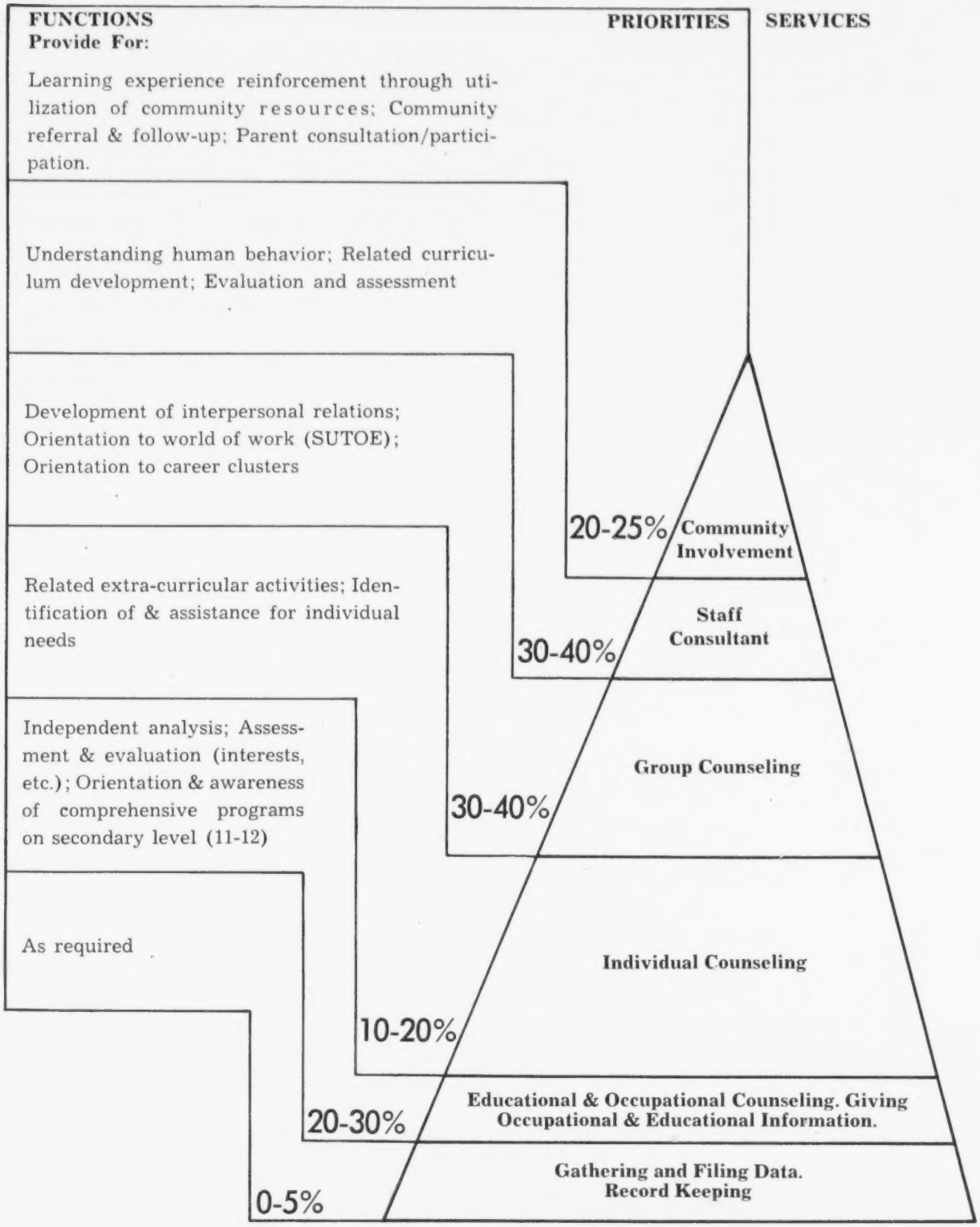
CAREER SPECIALIZATION (13-14)

Career Awareness (K-6)—Includes guidance services that will help the student in grade school to become aware of careers and their importance to the community.


FUNCTIONS
Provide For:
PRIORITIES
SERVICES
Learner—Community contact; Parent involvement and consultation; Community referral and follow-up
Related curriculum development; Evaluation and assessment; Early identification of social and learning strengths/weaknesses
Development of interpersonal relations; Development of awareness to home and family responsibilities; Development of decision making process; Introduction of Career Exploration (7-9)
Special assistance for the handicapped, disadvantaged and disruptive learner
Development of self-awareness
As required
15-20%
Community Involvement
40-50%
Staff Consultant
30-40%
Group Counseling
10-20%
Individual Counseling
5-15%
Educational & Occupational Counseling. Giving Occupational & Educational Information.
0-5%
Gathering and Filing Data. Record Keeping

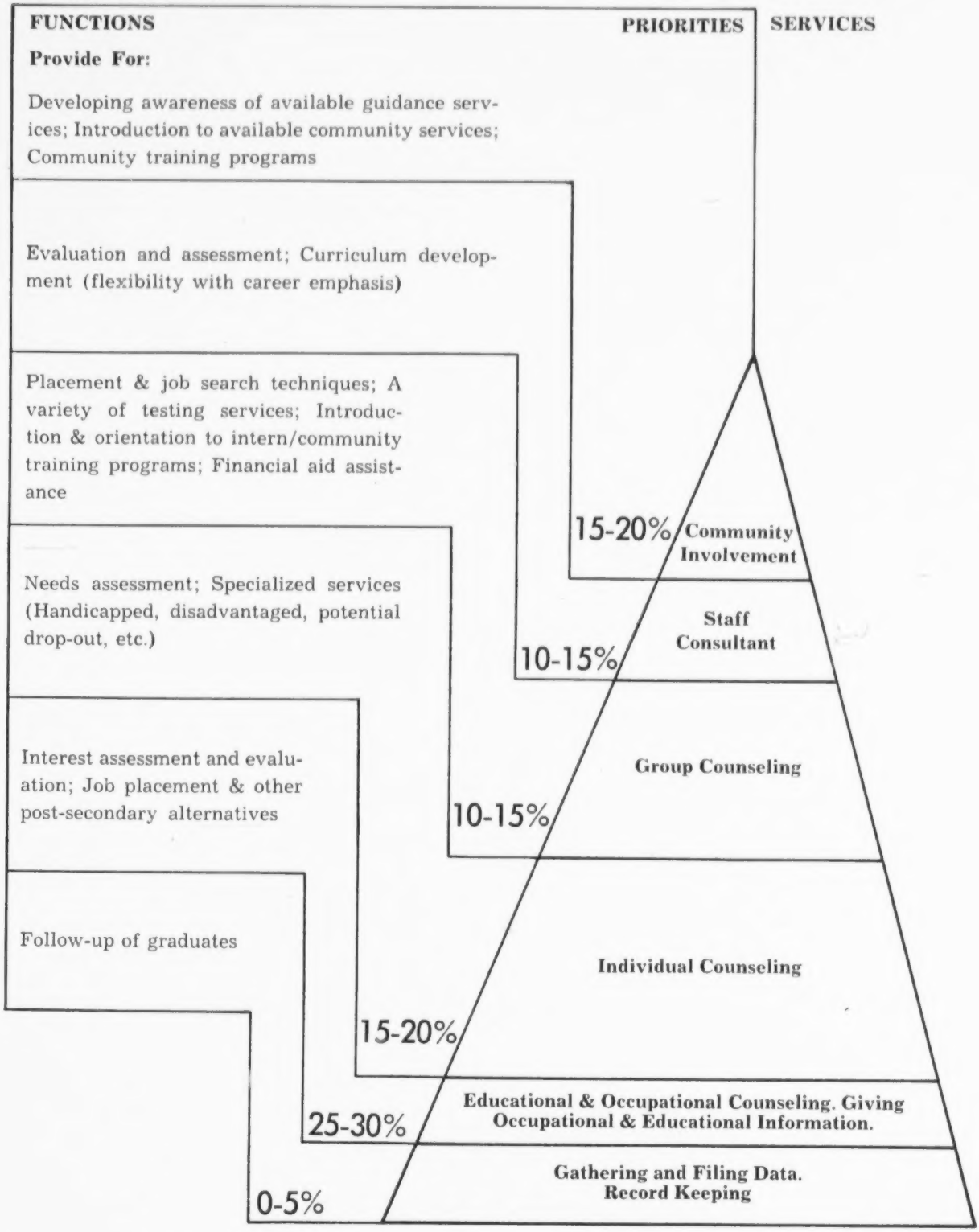
FULL RANGE GUIDANCE AND COUNSELING

Career Exploration (7-10)—Includes guidance services that will help the student in junior high school to identify and explore careers in which the student has an interest and a reasonable chance for entry.


FUNCTIONS
Provide For:
PRIORITIES
SERVICES
Learning experience reinforcement through utilization of community resources; Community referral & follow-up; Parent consultation/participation.
Understanding human behavior; Related curriculum development; Evaluation and assessment
Development of interpersonal relations; Orientation to world of work (SUTOE); Orientation to career clusters
Related extra-curricular activities; Identification of & assistance for individual needs
Independent analysis; Assessment & evaluation (interests, etc.); Orientation & awareness of comprehensive programs on secondary level (11-12)
As required
20-25%
Community Involvement
30-40%
Staff Consultant
Group Counseling
30-40%
Individual Counseling
10-20%
Educational & Occupational Counseling. Giving Occupational & Educational Information.
20-30%
Gathering and Filing Data. Record Keeping
0-5%

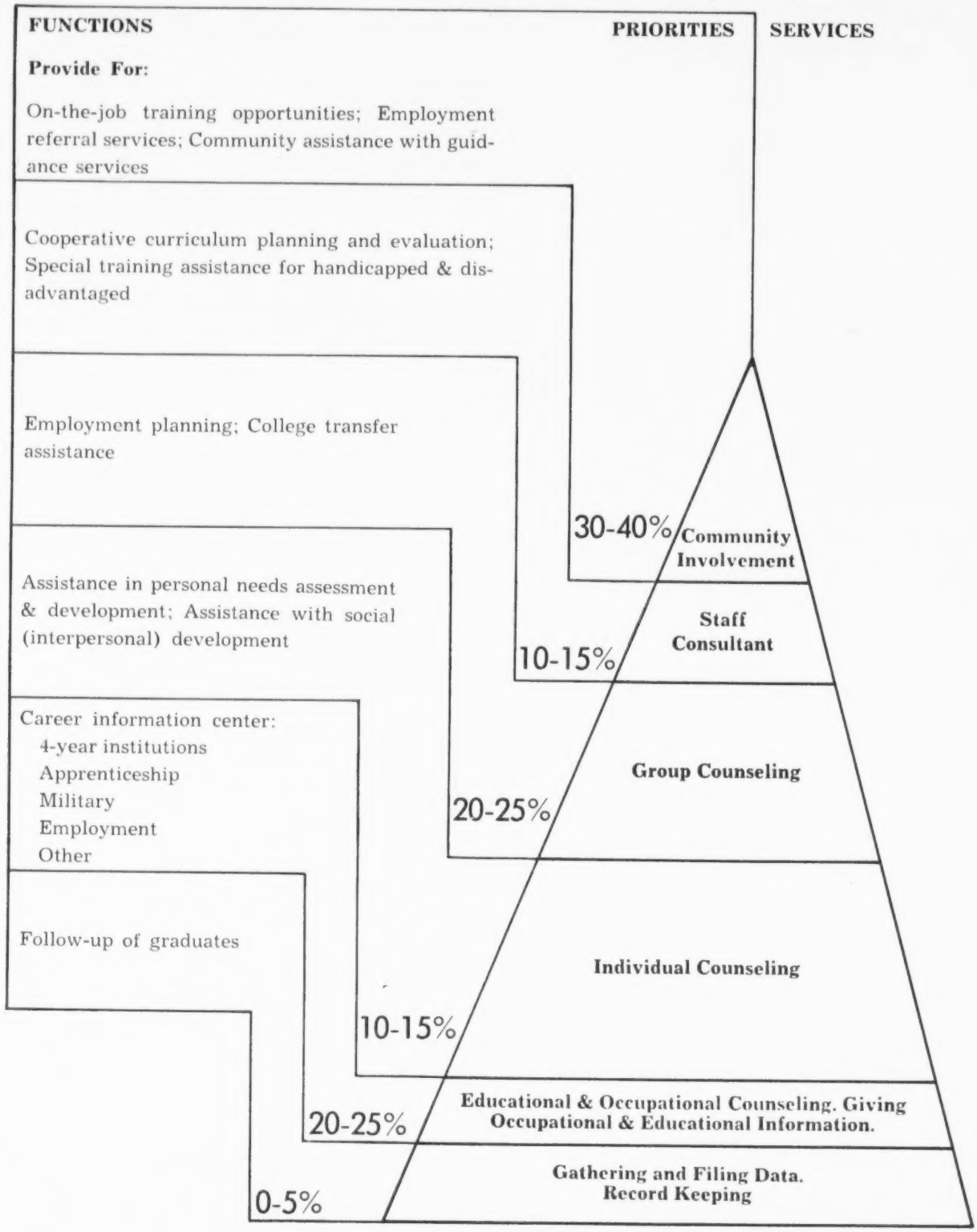
FULL RANGE GUIDANCE AND COUNSELING

Career Clusters (11-12)—Includes guidance services that will help the student in high school to identify and enter jobs and post-secondary training programs which are commensurate with his interests and abilities.


FUNCTIONS
Provide For:
PRIORITIES
SERVICES
Developing awareness of available guidance services; Introduction to available community services; Community training programs
Evaluation and assessment; Curriculum development (flexibility with career emphasis)
Placement & job search techniques; A variety of testing services; Introduction & orientation to intern/community training programs; Financial aid assistance
Needs assessment; Specialized services (Handicapped, disadvantaged, potential drop-out, etc.)
Interest assessment and evaluation; Job placement & other post-secondary alternatives
Follow-up of graduates
15-20%
Community Involvement
10-15%
Staff Consultant
Group Counseling
10-15%
Individual Counseling
15-20%
Educational & Occupational Counseling. Giving Occupational & Educational Information.
25-30%
Gathering and Filing Data. Record Keeping
0-5%

FULL RANGE GUIDANCE AND COUNSELING

Career Specialization (13-14)—Includes guidance services that will help the student at the post-secondary level to enter the occupation in which he has an interest and ability to succeed.



FULL RANGE GUIDANCE AND COUNSELING

PART III

EVALUATING FUTURE COUNSELOR TRAINING AND SERVICE: A measurement of the career guidance training and service.

TO ASSESS THE PROGRESS TOWARD FULL GUIDANCE CAPABILITY REQUIRES THE DEVELOPMENT AND IMPLEMENTATION OF AN APPROPRIATE METHOD OF MEASUREMENT. THE MODEL AS SUMMARIZED IN PART III AND SUPPLEMENTED IN AN ACCOMPANYING DOCUMENT HAS BEEN DESIGNED TO PROVIDE A BASIC EXPLORATORY FRAMEWORK FROM WHICH APPROPRIATE AGENCY AND GUIDANCE PERSONNEL MAY DEVELOP A PROCESS OF SELF EVALUATION.

A MODEL FOR EVALUATION OF TRAINING AND PERFORMANCE

THE MODEL PRESENTED IS DIVIDED INTO TWO SEPARATE PARTS:

I. **ENTRY SKILL LEVEL**: A MEANS FOR EVALUATION OF THOSE WHO WISH TO ENTER THE PROFESSION OF CAREER EDUCATION GUIDANCE AND COUNSELING. AN EVALUATION PROCEDURE FOR USE BY STATE IN ESTABLISHING CERTIFICATION REQUIREMENTS AND TRAINING AGENCIES IN ESTABLISHING TRAINING PROGRAMS.

II. **JOB PERFORMANCE LEVEL**: A MEANS FOR EVALUATION OF THOSE ALREADY EMPLOYED IN THE PROFESSION OF CAREER EDUCATION GUIDANCE AND COUNSELING. AN EVALUATION PROCEDURE FOR MEASURING ON-THE-JOB PERFORMANCE.

EVALUATION OF GUIDANCE AND COUNSELING ENTRY SKILL AND JOB PERFORMANCE LEVELS IS DEFINED IN TERMS OF THE FOLLOWING UNIT OF MEASUREMENT:

	Entry Skill Level	Job Performance Level
PR Performance Requirements	**Career Education Needs:** Identifies counselor entry skill level requirements based on identified career guidance needs.	**Areas of Job Responsibility:** Identifies function which the counselor must perform in carrying out his job responsibilities.
PA Performance Activities	**Training:** Identifies training activities required to equip guidance and counseling personnel with skills to meet identified career guidance needs.	**Guidance Activities:** Identifies guidance activities in which counselor may engage to carry out required functions.
PI Performance Indicators	**Certification:** Identifies requirements for job entry.	**Counselee Behavior:** Identifies action counselee should take to indicate counselor performance of identified function.

VT 019 663

VT 019 663
JONES, FRANK C.
A FOLLOW-UP STUDY OF GRADUATES OF DP 102 (KEYPUNCH AND UNIT RECORD MACHINES), A COURSE DESIGNED TO QUALIFY ITS GRADUATES FOR JOBS IN INDUSTRY.

WAYNE COUNTY COMMUNITY COLL., DETROIT, MICH.

MF AVAILABLE IN VT-ERIC SET.
PUB DATE - DEC71 34P.

DESCRIPTORS - OCCUPATIONAL SURVEYS; *FOLLOWUP STUDIES; *GRADUATES; *COMMUNITY COLLEGES; *TECHNOLOGY; COLLEGE PROGRAMS; *DATA PROCESSING
IDENTIFIERS - *WAYNE COUNTY COMMUNITY COLLEGE; KEYPUNCH

ABSTRACT - THE MAJOR PURPOSE OF THIS STUDY WAS TO DETERMINE IF GRADUATES IN THE KEYPUNCH AND UNIT RECORD MACHINE COURSE AT THE WAYNE COUNTY COMMUNITY COLLEGE ARE ACTUALLY PREPARED FOR SUCCESS IN GETTING AND HOLDING JOBS IN THEIR AREAS. TO OBTAIN DATA, 102 SUCCESSFUL GRADUATES OF THE PROGRAM WERE SURVEYED. OF THIS NUMBER, 81 RETURNED USABLE QUESTIONNAIRES. FINDINGS INCLUDE: (1) ALL BUT 21 PERCENT OF THE RESPONDENTS RESIDE IN AND AROUND THE DETROIT AREA, (2) A TOTAL OF 17 SUBJECTS WERE EMPLOYED IN KEYPUNCH OR UNIT RECORD MACHINES WHILE 64 WERE UNEMPLOYED, (3) OF THE 64 UNEMPLOYED SUBJECTS, 19 INDICATED A WILLINGNESS TO GO TO OTHER PLACES TO OBTAIN EMPLOYMENT, (4) OF THE SUBJECTS EMPLOYED, 11 INDICATED THAT THEY COULD NOT HAVE SECURED THEIR JOB WITHOUT HAVING TAKEN THE COURSE OR A SIMILAR COURSE, (5) A TOTAL OF FOUR EMPLOYED SUBJECTS RATED THE COURSE AS EXCELLENT WHILE 22 UNEMPLOYED SUBJECTS GAVE IT THAT RATING, (6) AS FOR THE EFFECTIVENESS OF THE COURSE FOR JOB PREPARATION, THREE EMPLOYED SUBJECTS RATED IT EXCELLENT, WHILE 17 UNEMPLOYED PERSONS RATED IT IN THAT MANNER, AND (7) IN REGARD TO JOB SATISFACTION, FIVE EMPLOYED RESPONDENTS REPORTED A HIGH DEGREE OF JOB SATISFACTION WHILE 13 UNEMPLOYED RESPONDENTS INDICATED SATISFACTION. APPENDIXES CONTAIN INSTRUMENTS USED IN THE STUDY. (AUTHOR/SN)

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A Follow-up Study Of Graduates Of DP 102 (Keypunch and Unit Record Machines), A Course Designed To Qualify its Graduates For Jobs in Industry, Wayne County Community College, Detroit, Michigan.

December, 1971

By

Frank C. Jones

VT 019663

OUTLINE OF STUDY

A Follow-up Study of the Employment Status

of Graduates of (DP 102) Keypunch and Unit Record Machines

at the Wayne County Community College

between September, 1970 and June, 1971

I. Statement of Problem

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The Purpose and Need of This Study

Between the fall term of 1970, and the spring term of 1971 inclusive, some 102 students enrolled in the Keypunch and Unit Record Machine Course offered at the Wayne County Community College. Course Number 102 is listed as offering nine credit hours designed to prepare graduates for the world of work in areas described in its title. The college catalogue describes it as a course with emphasis on the development of keypunch techniques with the objective of obtaining occupational speed in the operation of punched card equipment, including the sorter, reproducer and interpreter, based upon 16 contact hours.

Only in indirect ways has the college received feedback on these graduates. There was therefore the interest of the college, particularly the data processing department, in obtaining systematic feedback on the effectiveness of the course in doing what it was designed to do - prepare those completing it for the world of work. At least one method by which this can be determined is by the number of graduates who were successful in finding employment in either keypunch or unit record machines operation. This procedure, however, may have the added disadvantage of being also based upon the assumption that there does exist a job market for their services. If, however, this market does not exist, the college would still be interested in knowing if it is preparing graduates for "dead-end" employment.

Subpurposes of This Study

Along with the main purpose of determining if graduates,

In the keypunch and unit record machine course of the Wayne County Community College are actually prepared for success in getting and holding jobs in these areas, there are several other purposes of this investigation. These include:

1. Whether area of residence is related to successful employment
2. The relation of marital status to successful employment
3. The relation of education to successful employment
4. The willingness of graduates to persevere in seeking employment
5. Possibilities of advancements in these areas
6. The quality of the course as the graduate sees it
7. The effectiveness of the course for job preparation as the graduate evaluates it, and
8. Job satisfaction

Subpurposes of this study from the employer's viewpoint are:

1. Desirable characteristics in an employee
2. Rating of employees by employers
3. Evaluation of employees by employers,
4. Willingness of employers to employ other Wayne County Community College graduates

Procedures

In search of the answers to the purposes of this study, the writer conferred with several persons in charge of the data processing training program of the college. It was decided that a questionnaire administered to the 102 successful

graduates of the course should give adequate appraisal of, and insight into the several purposes.

With the purposes clearly in focus, the input of several persons in research, and a search of the literature on questionnaire design, and the follow-up studies, the questionnaire was constructed with some degree of satisfaction. This completed, however, was only the first step in the process of graduate contacts.

Through the office files of the college, names, addresses, and telephone numbers of graduates were obtained.

To accompany the questionnaire, a letter of explanation was composed. To expedite the return of the questionnaire, a self-addressed and stamped envelope was included in each letter.

Before the questionnaires were mailed, and subsequent to mailing, each graduate having a telephone number listed with the college was called and informed of the questionnaire and asked to cooperate in the college's effort to re-evaluate its course in keypunch and unit record machines.

In addition to the questionnaire sent to each graduate, each employer who was named in the employee's returned questionnaire, was also mailed a questionnaire having a letter of explanation, a self-addressed and stamped envelope included. No employer, however, was called by phone to request a return of his questionnaire. As has been previously stated under "purposes," this was for the purposes of having the employer relate to the college his desired characteristics in an employee, and his rating of Wayne County Community College employees.

Research of literature

Although there was a diligent search made of literature to find a follow-up study of data processing students, the writer is still not convinced that there is no such study. This seems so inconceivable that there is still the opinion that, perhaps, he did not research the right source.

There are, however, follow-up studies that have bearing on some aspects of this study. One such study is that of Egermier[1] who, on the basis of a sample of 179 subjects, forming a control group and an independent group, found that subjects taking academic training in conjunction with vocational training differed insignificantly from those subjects receiving only vocational training. Although this does not bear directly on the purposes of this study, it does indicate that if the college decides to improve its offerings in this area, doing so by requiring an academic course in conjunction is likely to prove fruitless, so it should look to other sources for improvement and not waste time in this direction.

In a follow-up study by Klein,[2] of 112 secretaries, he indicates that graduates' recommendations, for course improvements, should be the standards set by colleges. Because these subjects are practioners, they are up-to-date in the latest business practices whereas the college, being removed, may become somewhat sterile.

Schultz,[3] in a follow-up study of over 4,000 High ability Junior College graduates, found high praise of the community college faculty. Certainly the ratings of the course in

Keypunch and Unit Record Machines, and added comments about instructors at the Wayne County Community College are no less noteworthy of the faculty.

Sample

The original sample of this study consisted of 102 subjects, which was the entire population of those having completed the nine hour course in Keypunch and Unit Record Machines, DP 102, at the Wayne County Community College between September 1970, and June, 1971.

Of the 102 subjects to whom questionnaires were sent, 80 percent returns were received. Twenty-one subjects could not be contacted to request a return of questionnaires. Some had moved, leaving no forwarding address, while others either had not telephone services or had an unlisted telephone number. A total of 24 subjects had no correct listing of telephone numbers while three subjects had unlisted numbers. How many of this number had moved, is uncertain. All that can be said is that the percentage seemed to have been high, even among some who got their questionnaire through a relative or a friend and returned them. In some 25 cases, a second questionnaire was sent either because of the loss of the first one or a change of address.

Of the 81 questionnaires returned, 17 subjects were employed either in keypunch or unit record machine operation while 64 subjects were either unemployed or employed in areas other than keypunch and unit record machines. At least three of the 17 employed subjects secured their own jobs, while

several were already employed in keypunch or unit record machines before they took the course. Just how many were placed by either an instructor or by the college itself, cannot be ascertained.

Of those 17 subjects employed in keypunch or unit record machines, 16 were female and one male. Of those subjects who completed the course but were unemployed in this area, 63 were female and one male. Thus, of the 81 subjects responding to the questionnaire, 79 were female and two male.

Education

Subjects in this survey were asked to circle the grade completed in school and college. Of those who were employed in this area, 14 indicated that they had completed the twelfth grade, two indicated that they had completed the tenth grade, and one, two years of college.

In answer to the same question, 51 subjects unemployed in this area, indicated that they had completed the twelfth grade; three indicated that they had completed the eleventh grade; three the tenth grade; three listed two years of college completed: three unemployed subjects omitted the answer to this question: and one each, listed eighth and ninth grade completed.

Marital Status

Of the 17 subjects employed in keypunch or unit record machines, nine were married: five were single, and three were divorced. Of the 64 subjects unemployed in this area, 28 were

single; 20 were married; 13 were divorced. Three unemployed subjects did not indicate their marital status.

Design of Study (Organization)

The basic plan for gathering information, leading to answers of stated purposes, is by questionnaire. The questionnaire is designed to give answers not only to more basic purposes of the study, but also to seek ideas and recommendations of the respondents that might be of future assistance in planning the course. All questions, with the exception of the last two, on both questionnaires, employee and employer, are closed, and are designed to elicit simple answers, mostly by a simple check, for easy quantification and analyses. All efforts were made to avoid leading questions.

Although a control group might have been of benefit in making certain comparisons, this was not necessary from the standpoint that evaluation of this program is sought and made in terms of what the program is designed to do. Besides, there are some controls built into the study itself that serve this purpose. One example of this is the cross-comparison of residence and other variables. Several of the variables are cross-compared for the purpose of discovering any significant relationship that might exist. The main or controlled variable of this study is successful employment in either keypunch or unit record machine operations. This variable is evaluated on its relationship to all other variables considered as independent variables. Findings and recommendations are based

upon information relating to the independent variables. No statistical analysis is used because it is felt that it would add little or nothing to the conclusions reached. It is felt that the tables used present a clear picture for easy understanding of the study.

Findings

1. If one could draw an imaginery line west on six mile road between Conner and Greenfield; South on Greenfield to Michigan; west on Michigan to Jefferson; and east on Jefferson to Conner, he would encompass an area that constitutes 78 percent of the subjects who finished the keypunch and unit record machines course, but are unemployed in this job area. Thus, of the unemployed, only 14 subjects or 21 percent live outside this area. Of those employed in keypunch or unit record machines, seven persons, or 41 percent reside within this area while 59 percent reside outside this area. Of the subjects employed, and living within the above area, no subjects in zones 1, 2, 3, 6, 7, 8, 11, and 38 are represented.
2. Of the 17 subjects employed in keypunch or unit record machines, only three had applications for employment elsewhere; while, of the 64 subjects unemployed in this area, 31 had job applications filed at one or more places. Forty-seven indicated that they plan tocontinue to seek such employment. Either the retaining 17 unemployed are not certain if they will continue to seek such employment or they have given up hope of their efforts or search being successful.

3. Of the 64 unemployed subjects in keypunch or unit record machines, 13 would be willing to go to Ohio out of town or out of state to secure employment. No employed subject was willing to leave town to seek employment.

4. Of the 17 subjects employed, 11 indicated that they could not have secured their job without having taken this or a similar course. Six subjects omitted the answer to this question.

5. Only three, of the 17 employed subjects, indicated that they had a chance of advancing to a higher position in this area. Others were either negative or uncertain.

6. As for the quality of the course, from the purview of those subjects who were employed, four rated it excellent while 13 rated it good. Of those 64 subjects unemployed in keypunch or unit record machines, 22 rated the quality of the course as excellent; 27 rated it as good, nine rated it as average; and four rated the quality of the course as fair. No subject, employed or unemployed, rated the quality of the course as poor.

7. As for the effectiveness of the course for job preparation, three of the subjects employed rated it excellent, while the remaining 14 rated it as good. In answer to this same question by the 64 unemployed subjects, 17 rated it as excellent; 26 rated it as good; 11 as average; nine as fair; and two as poor.

8. Of those 17 subjects employed in this area, five indicated that they are happy in their jobs, while ten subjects indicated that they were satisfied with their jobs. Two subjects omitted checking this question. Of those 64 unemployed subjects in this area, two indicated that they were happy with their present jobs; 13 indicated satisfaction; while 12 were displeased with their present jobs. The remaining 37 subjects had no jobs at all and therefore no comments on this question.

Suggestions

To the question asking for suggestions to improve the course, the following seven answers from the subjects, both employed and unemployed stand out:

1. Subjects do not obtain the experience required by employers.
2. Accuracy and speed should be more strongly stressed.
3. The college should have an effective placement center.
4. Subjects need more practical hands-on experience.
5. Training at the college should be brought in line with industry requirements.
6. A greater variety and more recent machines are needed.
7. Spend more time on things that matter and get rid of outdated routines.

From the suggestions given by the subjects, it is often difficult to make a clear-cut statement out of their meanings. Often statements carry several meanings. This may cause some overlap, in the above effort, to include suggestions that seemed to have had concensus with others.

and the course. From the employer's point of view, each subject, employed in keypunch or unit record machines, was asked for his place of employment and the name of her supervisor. A questionnaire was then sent to the company, in care of the person named as supervisor. Of the 17 questionnaires mailed, only nine were returned - or 53 percent. See the following table.

TABLE 1

Ratings of Desirability of Traits by Six Employers

Cluster 1				Cluster 2		Cluster 3				
Dependability	Efficiency	Attendance	Attitude Toward Work	Punctuality	Productivity	Neatness	Attitude Toward Co-Workers	Attitude Toward Sup.	Creativity	Work Potential
1	1	1	1	2	2	2	3	4	5	6
1	2	2	1	3	5	7	3	4	5	8
2	3	3	5	4	5	8	9	8	6	8
3	4	4	6	7	6	9	10	10	11	9
6	4	5	6	8	7	9	10	11	11	10
7	7	8	7	9	9	10	11	11	11	10
TOTAL 20	21	23	26	33	34	45	46	48	49	51

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Although nine employers returned their questionnaires, only six employers rated characteristics (traits) listed in Table 1 in order of desirability in an employee. The lowest numerical number in the ratings indicates the highest level of desirability of that trait in an employee. If, of the 11 traits, an employer placed a 1 in the circle before that trait, this indicated that, of the 11 traits, this was his preference in an employee. If he placed an 11 in the circle before a trait, this indicated that this trait was the least preferable of all others, although it may have still been of some importance to him.

The total numerical value of traits in Table 1 indicates the traits most preferred as well as those least preferred by employers as a whole, although most employers differed in actual numerical value placed on different characteristics.

Upon observing the total numerical values of the characteristics listed in Table 1, rating from the highest to the lowest, they are: dependability, efficiency, attendance, attitude toward work, punctuality, productivity, neatness, attitude toward co-workers, attitude toward supervisors, creativity, and work potential.

Careful analyses of these scores would seem to reveal a unique grouping that forms three separate and distinct clusters. Dependency, efficiency, attendance, and attitude toward work seem to constitute one cluster. Punctuality and productivity appear to constitute a second cluster, and neatness, attitude toward co-workers, attitude toward supervisors, creativity, and work potential appear to constitute a third cluster.

If these clusters were placed on a three point rating scale, they would perhaps be rated: highly desirable, desirable, and less desirable.

The highly desirable cluster would indicate that when securing employees, uppermost in the mind of the employer is the securing of employees who possess these characteristics. The second or desirable cluster indicates that the employer is likely to desire employees who are not only regular in attendance, but who are on time and function well in their positions.

The third or less desirable cluster seems to indicate that although the employer may desire these attributes in an employee, they are not an absolute necessity. Neatness on the job, though important, may not increase productivity. What an employee thinks about his fellow workers need not be important so long as he does not allow it to interfere with his responsibilities. One's attitude toward his supervisor could matter little if it does not interfere with respect for the right of the supervisor to supervise the operation. In a keypunch operation, the less desirability of creativity may be due to the fact that the work is preplanned, obviating the need for new ventures on the part of the employee. Finally, the low desirability of work potential may indicate why employers prefer experienced employees. They may hold a low estimate of what one might be able to do in the future. Their need may be immediate.

TABLE II

Ratings of Subjects by Employers

	Excellent	Good	Average	Fair	Poor
Dependability	11	1111	11	1	
Efficiency		1111	111	11	
Attendance	11	111	11	11	
Attitude Toward Work	11	1111	11	1	
Punctuality	11	111	111	1	
Productivity		1111	1111	1	
Neatness	1111	11	1	1	1
Attitute Toward Co-workers	1111	111	1	1	
Attitude Toward Supervisors	111	111	11	1	
Creativity		111	1111	11	
Work Potential		111	11111	1	
TOTAL	19	36	29	14	1

Employers were asked to rate their employees in the 11 traits (of Table II) on a five point scale. Of the nine employees rated by the employers, no single employee was rated on all five points of the rating scale. The maximum spread of any individual employer's rating was over four points on the scale. The minimum number of points on the scale in which an employee was rated was one. Three employees were rated over a span of four points on the scale. Four employees were rated on only two points on the scale. One employee was rated on three points on the scale and one person was rated on only one point

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of the scale. Only one employee was not evaluated in consecutive categories where at least two categories were used on the rating scale by the employer. Three employees were rated by their employers in categories on the scale ranging from excellent to fair in several different characteristics. One employee was rated either excellent or good in all traits. Only one employee was rated excellent in most traits, and fair in several. Only one subject was rated on a range from average to fair, while another was rated on a range from good in some characteristics to average in others - approximately equally divided. Only one subject was rated good in all characteristics.

Although three of the subjects, rated by the employers, worked for the companies prior to attending Wayne County Community College, there is no apparent difference in the ratings received by these subjects and those who began working for companies since completing the course in keypunch and unit record machines. The subject with the poorest rating was the one who had been employed the longest of the nine employees - over six years, while one subject, having been employed only five months, was rated good in every characteristic, and another five month employee received a rating of excellent in seven of eleven traits.

Taking the ratings in terms of totals, in the eleven characteristics of employees as rated by the employers, 55 percent are above average qualities; 29 percent are average qualities and only 15 percent of employee's characteristics are rated by employers to be below the average of desirability.

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If the average traits desirable to the employer were grouped with the 55 percent above average ratings, 85 percent of the characteristics of Wayne County Community College keypunch and unit record machine graduates are satisfactory to employers and only 15 percent of their traits are unsatisfactory - based, however, on the 53 percent employer returns.

As for the ability of Wayne County Community College students, employed in keypunch or unit record machine operations, to handle assigned duties without excess supervision, seven employers state that they do have this ability. Only two persons who took the course are indicated as lacking this ability, and both of them were employed by the companies before they took the course.

In answer to the question: Would you be willing to employ other graduates of the Wayne County Community College, seven employers stated that they would, while only one said no. One employer did not answer this question.

Summary

In the description of the course in the college catalogue, it is stated that the objective of the course is that of obtaining occupational speed. On the basis of the evidence found in this study, much along this line is to be desired. Besides the statements of the graduates to this effect, from both the employed and unemployed, the fact that 47 graduates indicate that they will continue to seek employment in this area is evidence that they have tried to find employment, but for some reason, have been unable to do so. The question of

importance is to know why they have been unable to find jobs in an area for which they have been prepared or trained. The answer to this question is likely to be found in one of three areas: either there were no jobs available for their skills; they did not know where to find jobs; or, they were not properly trained for the job market. Let us analyze the first reason - no available jobs. If there are no jobs available, then these subjects should not have been trained into a dead-end[4] and if the college is involved in more than simply training it must be sensitive to the needs of subjects beyond the training stage. In regard to the second possible reason - where to find jobs, is again a vital concern of the college. It is assumed that the Wayne County Community College is primarily an organization designed to prepare subjects for the world of employment. If this assumption is true, then it must follow that such an institution must play a vital role in assisting its graduates in securing placement. This would indicate that placement services of the college would be one of its most vital organs - second only to that of training. As the employment statistics of this study indicates that the college is deficient in placement services, it is the writer's recommendations that the college re-evaluate the status of its placement services with the purpose of upgrading these services commensurate with the philosophy and purpose of the community college.

A factor that the community college must reckon with, in the preparation of employees, is the employer's desires and

values. It is expedient to know that the employer does have a hierarchy of values of characteristics desired in an employee as is illustrated in Table II, and that in terms of these values, Wayne County Community College graduates seem to rate quite high. A basis for this latter position is illustrated in the employer's respect for the ability of the employees, from the college, to handle assigned duties without excess supervision. These factors make him willing to hire other graduates of the college if needed. This should be most encouraging to the college and inspiring to future graduates to know this.

-Preparation is, first and foremost, the major objective of training. Unless the college is in direct contact with the business world, it cannot know what industry expects of its employees. It is, without a doubt, that most of the graduates of the college cannot meet the standards set by industry. Many indicate that their speed and accuracy are inferior to industries' requirements. Industries' excuse for not hiring such subjects is that they have not had enough experience. Employers tell them that they need approximately two years experience to qualify. The combination of these two attributes perhaps form by far the greatest single reason why the 64 subjects are not employed in the area of keypunch and unit record machines. How can these two problems be overcome? Two ways are suggested. First, greater concentration can be placed on speed and accuracy in the classroom and second, the college having an effective placement agency, could be so closely allied with industry that its students, perhaps, could be placed in

internship in industry, much like one preparing to be a nurse interns in a hospital. Under no conditions should the college release a graduate who is not qualified to hold a job for which he has been prepared. This will only likely bring dissatisfaction to both the graduate and the employer and finally the college. Some of those who completed this course are already saying they are getting rusty by not having employment, and may need to take the course again. If the college wants a good friend for life, it must follow him through to successful employment.

The job possibilities for inner-city residents appear lower than those of residents of other areas. This fact indicates that the community college may not be reaching many of those for whom it is largely designed. All this, however, cannot be the fault of the community college. This may be due partly to the fact that those graduates living in more affluent areas may be more in touch with occupational opportunities. It does mean, however, that if the inner city residents are going to succeed, they will need a great deal of help from the college in bridging the gap between poverty and affluence. Here again, this gap can be bridged by better training and placement services.

Limitations of Study

This study does have limitations. First of all, only 80 percent of subjects to whom questionnaires were mailed returned them. What happened to the other 20 percent who did not return their questionnaires? Are they different from those

who did return theirs? We could only have known this through a 100 percent return.

Then, too, the study has limitations due to the smallness of the sample and the items investigated. We later thought of other items that could have been added as variables. We are not certain that the sample was a representative sample of all of Wayne County, although it appears to include subjects from many areas in Wayne County, but perhaps in too small numbers. For these and other reasons, we feel that it would be unsafe to generalize the findings to other than those subjects who are represented in the sample and to this college. In fact, it was not the purpose of this study to generalize beyond this college. There are too many variables differing in each college and community to justify broad generalizations. This study was done solely for the purpose of giving insight into this program of the college so that those concerned might update program needs. If this has been accomplished, and concern developed into action programs, it has accomplished its objective. If, however, insight has been gained and no programs developed from this insight, this study is a waste.

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APPENDIX A

Design of Research Instruments

Subject Questionnaire

The principal instrument of this study is the questionnaire and is designed to elicit four types of information, namely:

1. Personal data
2. Employment data
3. Evaluation data
4. Recommendations

The employment section of the questionnaire, wherever possible, is designed primarily for checks of yes or no answers. The evaluation section has a five point scale rating design for simply checking categories ranging from excellent to poor. The evaluation of their own job satisfaction is based on a three point rating scale ranging from happy to displeased, with only a check mark necessary to indicate position.

The recommendation section of the instrument is perhaps the only section of the questionnaire that is open. The purpose of this is to pick up answers that might otherwise have been missed.

Letter of Explanation

The letter of explanation consisted of four parts, namely:

1. The college heading
2. The salutation
3. The body
4. The closing (signature)

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The college stationary was used to verify the authenticity of the study while the personal salutation was designed to give the respondent the feeling of a personal appeal being made of her. The body of the letter was composed in a manner to make the respondent feel a sense of responsibility and helpfullness to the college and, therefore, rendering a service to herself, the college and later graduates by filling out the questionnaire and returning it.

The closing was signed ~~by the researcher~~ to give the respondent the feeling that this communication was more than a form letter sent to an impersonal entity by an impersonal concern or college.

The telephone communication was designed in a similar manner to the letter of information. The researcher himself telephoned at least 85 percent of all subjects having telephone numbers listed - some as many as four times. Several persons whose telephone numbers were not properly listed with the college, were located by a search of the telephone directory. Replicas of the questionnaires and letters used may be seen in the appendices.

APPENDIX B

Employer Instrument

Questionnaire

The employer's questionnaire is designed to elicit three types of information. These are:

1. Company data
2. Occupational data on subject
3. Evaluative data
   a. Characteristics
   b. Employees

The occupational section of the questionnaire is designed to elicit answers to questions on employees of the simple, closed, checklist type. There is only one question, on the entire questionnaire, that cannot be answered in this fashion, and that is his length of employ with the company.

The evaluative section of the questionnaire is divided essentially into two parts. In the first part, the employer is given a list of 11 characteristics or traits, and is asked to place them numerically in rank-order according to his desirability of having these characteristics in his employees.

In the second part of the evaluation, the employer is asked to rate the employee in the 11 characteristics, on a five point rating scale, having values ranging from excellent to poor. Only check marks are needed to answer each item. In the continuation of this employee evaluation, two questions were asked whereby the employer would check either yes or no to complete the evaluation answers.

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Letter of Explanation

The letter of information sent to the employer had an overall basic design purpose as that of the subjects of this study. It, too, was divided into four parts, namely:

1. College heading[1]
2. Salutation
3. Body
4. Complimentary close (signature)

When the employee returned her questionnaire, it had the name of her supervisor, if she was employed. This name was placed in the salutation to indicate warmth and personal implication to the supervisor with the hope that this would solicit his interest in perusing the contents of the letter. In the body of the letter, the design was to imply that the college wanted to serve industry better and needed this information to better learn what industry's needs and desires were.

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[1]For the purpose of the college heading, and signature, see prior notations.

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APPENDIX C

Wayne County Community College

Data Processing Keypunch and Unit Record Machine

Course 102

A follow-up study of job status of students completing Data Processing Keypunch and Unit Record Machines, Course 102, at Wayne County Community College, designed to assist the employee, the employer, and the College in future planning.

Name of Employee:_____
(Last) (M.I.) (First)

Address:_____

Marital Status: ___Married ___Single ___Div. Sex: ___ ___
M F

Circle Last Grade Completed in School: 8 9 10 11 12

Circle Years of College Completed: 1 2 3 4

Name of Employer:_____

Name of Immediate Supervisor:_____

		Yes	No
1.	Do you operate Data Processing Keypunch or Unit Record Machines as your regular job:	____	____
2.	Do you perform other work related to Data Processing Keypunch or Unit Record Machines:	____	____
3.	What is the title of your regular job?_____ _____		
4.	If you are not working at Data Processing Keypunch or Unit Record Machines, do you plan to continue to seek such employment?	____	____
5.	Is your application for Data Processing Keypunch or Unit Record Machines Operation on file with any employment agency or plant? If so, with what agency or plant? _____	____	____
6.	If requested to do so, would you be willing to accept a Data Processing Keypunch or Unit Record Machines Job out of town or out of state?	____	____

2408

	Yes	No
7. If you are working at Data Processing Keypunch or Unit Record Machines, could you have secured this job without having had this or a similar course?	____	____
8. Is there a possibility for your advancement to a higher position. To what position? _____	____	____

We would like to know what you think of Data Processing Keypunch and Unit Record Machines, Course 102, as a course and its effectiveness in preparing you for a job. Indicate this by placing a check mark under the word below that most nearly describes your feelings.

	Excellent	Good	Average	Fair	Poor
Quality of the Course					
Effectiveness of Course for Job Preparation					

With your present job, are you ___Happy ___Satisfied ___Displeased

What suggestion (s) have you to offer to improve Data Processing Keypunch and Unit Record Machines, Course 102?

_____

_____

_____

Other Comments:

_____

_____

_____

Dear Miss Doe:

Enclosed you will find a brief questionnaire designed to assist the college in evaluating its courses in Keypunch and Unit Record Machines. You can assist us in this program by filling out the questionnaire and returning it to us immediately. A self-addressed envelope is included to expedite time.

Yours truly,

Frank C. Jones
Intern

FCJ:mnc

Enclosures

2410

APPENDIX D

Wayne County Community College

Date Processing Keypunch and Unit Record Machine

Course 102

A follow-up study of job status of students completing Data Processing Keypunch and Unit Record Machines, Course 102, at Wayne County Community College, designed to assist the employer, the employee, and the College in future planning.

Name of Company:_____

Address of Company:_____

Name of Employee:_____
(Last) (M.I.) (First)

Employee's Position:_____

Immediate Supervisor:_____

		Yes	No
1.	Does employee perform Data Processing Keypunch or Unit Record Machines as her job: Full-time_____ Part-time_____	____	____
2.	Does employee perform a job related to Data Processing Keypunch or Unit Record Machines?	____	____
3.	If an opening in Data Processing Keypunch or Unit Record Machines operation presents itself, will this employee be considered to fill the position?	____	____
4.	For how long has this employee been employed with your company?	____ yrs.	____ mos.

2411

Number from 1-11 the rank order of desirability of these characteristics you would prefer in an employee.

Please rate this employee. This will help Wayne County Community College in its future planning of instruction with regard to your requirements of all employees.

	Excellent	Good	Average	Fair	Poor
( ) Dependability					
( ) Attendance					
( ) Punctuality					
( ) Efficiency (quality)					
( ) Productivity (quantity)					
( ) Creativity (New Ideas)					
( ) Attitude Toward Work					
( ) Work Potential					
( ) Neatness of Appearance					
( ) Attitude Toward Co-workers					
( ) Attitude Toward Superiors					

	Yes	No
5. Does employee have ability to handle assigned duties without excess supervision?	____	____
6. Would you be willing to employ other graduates of Wayne County Community College?	____	____

Comments:

_____

_____

_____

_____

Dear Sirs:

The Wayne County Community College is now in the process of updating its Data Processing Program. We need your help in evaluating both its programs and its students. Enclosed is a brief questionnaire designed to furnish us with the necessary information for such an evaluation. Please have someone complete this questionnaire at your earliest opportunity and return it to us immediately. A self-addressed and stamped envelope is included to make it more convenient for your return and to expedite time.

All information included in this questionnaire will be held in strictest confidence and will only be used to assist us in arriving at general conclusions (no personal conclusions will be used).

Thank you for your cooperation.

Yours truly,

Frank C. Jones

FCJ:mnc

Enclosures

2413

VT 019 699

VT 019 699
ARKANSAS ADVISORY COUNCIL FOR VOCATIONAL-TECHNICAL EDUCATION, SECOND ANNUAL REPORT, 1971.

ARKANSAS STATE ADVISORY COUNCIL FOR VOCATIONAL-TECHNICAL EDUCATION, LITTLE ROCK.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 5APR71 9P.

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IDENTIFIERS - *ARKANSAS

ABSTRACT - IN ITS SECOND ANNUAL REPORT, THE ARKANSAS ADVISORY COUNCIL FOR VOCATIONAL-TECHNICAL EDUCATION EMPHASIZED THAT THE MAJOR THRUST OF VOCATIONAL EDUCATION SHOULD BE SHIFTED FROM POST-SECONDARY SCHOOLS TO THE SECONDARY SCHOOL SYSTEM. RECOMMENDATIONS INCLUDED SUBSTANTIALLY INCREASED FUNDING FOR VOCATIONAL EDUCATION AT ALL LEVELS, CURRICULUM REVIEW, FUNDING STUDIES, INDUSTRY TRAINING PROGRAMS, AND MOBILE TRAINING UNITS FOR USE IN BOTH THE PUBLIC SCHOOL SYSTEM AND FOR ADULT TRAINING. (MF)

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SECOND ANNUAL REPORT

ARKANSAS ADVISORY COUNCIL FOR VOCATIONAL-TECHNICAL EDUCATION

ACT 151 OF THE SIXTY-SEVENTH GENERAL ASSEMBLY OF THE STATE OF ARKANSAS, 1969

April 5, 1971

ED049699

2415

The Arkansas Advisory Council for Vocational-Technical Education was created by Act 151 of the Sixty-Seventh General Assembly of the State of Arkansas, 1969. It is composed of 32 members from diverse backgrounds in business, industry, labor, agriculture and education. It is charged by law to advise the State Board for Vocational Education concerning the operation of vocational education programs and make recommendations concerning such programs.

Rowan J. Altheimer
Grady P. Arrington
L. C. Baber
Russell Baxter
M. A. Blakely
Ken Boettcher
H. L. Bryles
W. H. Cluck, Jr.
Lloyd E. Curtis
James A. Dildy
John Fitzgerald
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Ralph Hudson
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H. Thomas Loberg
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F. V. Thompson
Leona A. Troxell
Harry Vandergriff
John Vandiver
William L. Walker
Adrian Williamson, Jr.
Hardy L. Winburn, Jr.
Daniel H. Woods

Members of the Advisory Council

VTE

416 Continental Building, (501) 374-6790
Little Rock, Arkansas 72201

ARKANSAS ADVISORY COUNCIL for VOCATIONAL - TECHNICAL EDUCATION

DANIEL H. WOODS
Chairman

LANNY W. HASSELL
Executive Director

April 5, 1971

Mr. Rabie Rhodes, Chairman
State Board for Vocational Education
State Education Building
Little Rock, Arkansas 72201

Dear Mr. Rhodes:

Accompanying this letter is our Second Annual Report indicating our concern for various areas of vocational education in our State, along with recommendations we feel will improve the value of vocational education programs.

I wish to take this opportunity to inform you that at its regular quarterly meeting in March, the Advisory Council unanimously passed a resolution commending the State Board for Vocational Education and the State Department of Education for the advances that have been made in vocational education in our secondary school system over the past two years.

Furthermore, I, and the members of the executive committee who were invited to attend, wish to commend the State Department of Education on its sponsorship of the First National Conference on Mobile Training Centers, April 3-4, 1970, at the Winrock Convention Center. This was a most outstanding and informative seminar that will be of inestimable value not only to vocational education in Arkansas, but to the Nation. For this invitation, and the many other courtesies extended the Council, we are most appreciative.

The Council sincerely hopes that the opinions and recommendations given in the accompanying report will be of benefit to the Board in the preparation of future plans. The Council looks forward to working with you in developing such plans and working toward the improvement of all aspects of vocational education in Arkansas.

Sincerely,

Daniel H. Woods

Daniel H. Woods
Chairman

2417

DHW:lt

SECOND ANNUAL REPORT

of the

ARKANSAS ADVISORY COUNCIL FOR VOCATIONAL-TECHNICAL EDUCATION

While almost everyone in this State agrees that additional vocational education is needed, the philosophical differences of where to spend the bulk of *new* money is still very much open to question.

This Council remains convinced that the major thrust of vocational education should be shifted from post-secondary schools to the secondary school system. This is not to say that any existing post-secondary schools should be closed or their operations curtailed in any way; on the contrary, the Council feels that existing post-secondary schools need to be upgraded and expanded as funds become available. Thus, it is readily apparent that substantial sums of *new* money are an urgent requirement.

Therefore, the following recommendations for 1971 are meaningful only if taken in the broader context of the general recommendations made in the Advisory Council's report dated September 2, 1970.

These 1970 recommendations were:

(1) That emphasis on vocational-technical education should be directed to establishing a comprehensive high school educational program throughout the State.

(2) Additional post-secondary area vocational-technical schools should not be built until the existing ones have expanded their enrollment and curriculum.

(3) The present plan for constructing new schools should be abandoned, and any new post-secondary schools should be built where student needs and job opportunities are the greatest.

With these thoughts in mind, we make the following recommendations to the State Board of Vocational Education.

Elementary and Secondary Education

This Council strongly feels that all elementary and secondary public school students should have the opportunity for vocational education, and that this can best be accomplished through vocational orientation in elementary and junior high schools, followed by the availability of vocational training in area comprehensive high schools. The area high schools, in addition to serving the needs of students in the district in which they are located, should also be made available to students of neighboring school districts, and be utilized for adult training programs in the evening and on weekends.

To maximize the impact of vocational education, it is essential that all teachers and counselors have first-hand knowledge of the benefits vocational education brings to the student, to the school system, and to education in general.

Furthermore, it is important that all education, and vocational education in particular, be pointed to a common goal—a rewarding and satisfying career opportunity for all students, whether they leave school after 12 years or earlier, or go on to complete college.

Finally, that everyone, students, parents and teachers, must be made aware of the appeal and merits of vocational education in our public school system.

Recommendations:

(1) That substantially increased funding be provided for vocational education in our elementary and secondary school system.

(2) That the establishment of area comprehensive high schools in population centers throughout the State be promoted and financially supported by the State Department of Education.

(3) That a "round-robin" concept of vocational orientation and training, utilizing mobile training units, be implemented in our secondary schools.

(4) That a system of teacher workshops be initiated to acquaint elementary and secondary teachers with the many aspects of vocational orientation and training.

(5) That the State Department of Education take necessary action to require knowledge of, and training in, occupational clusters and vocational orientation for *all* elementary and secondary school counselors.

(6) That they take the steps necessary to *complete* the transition of vocational agriculture education departments from an emphasis on production agriculture to other more relevant areas of agriculture and agri-business instruction.

(7) That they take the initiative in informing the general public, school boards, school administrators, teachers and students of the appeal and merits of the various levels and programs of vocational education.

Adult Vocational Education

No consideration or evaluation of Arkansas' Adult Vocational Education programs can be made without an immediate observation of its distinct relationship with secondary education. The problem facing adult vocational education is best illustrated by the findings contained in the First Annual Report of the National Advisory Council on Vocational Education when they said:

> *". . . the reform of American schools the Nation so desperately needs will not come about if the Federal Government continues to invest nearly $4.00 in remedial manpower programs for each $1.00 it invests in preventive vocational programs . . . "*

While the problem of stemming the flow of untrained and uneducated youth into the labor market is a national problem, it is not without roots in Arkansas, where for every $1.00 spent at the secondary level for vocational education, approximately $10.00 ($4 million v. $41 million) is spent for post-secondary training in our area schools, MDTA, and other manpower training and supportative programs, which are essentially remedial in nature. Consequently, these agencies, other than the Southwest Technical Institute, are giving instruction in vocational training which could be offered at the secondary level, and which leaves the area vocational-technical schools anything but post-secondary technical institutions.

Much more effort is needed to keep curriculums and equipment updated. The use of outdated methods and old equipment cannot result in anything less than our educational system training individuals as much as several years behind industry's progress. Maintenance of curricula is, therefore, essential and needs to be reviewed on a continuing basis.

Individuals who need training need more than "new facilities." They need good, realistic, well-constructed instructional programs. The Arkansas Industry Training Program is excellent evidence that people are willing to literally donate their time to receive training which is relevant to them and holds promise of giving them skills for a job in the area in which they live.

The Council recognizes that the Division of Vocational, Technical and Adult Education has several limiting factors affecting its work. The most obvious example is the amount of money the Division has to work with–less than five percent of the total *educational* budget of the State Department of Education–$6 million v. $120 million, with less than $2 million of this allocated to the public school system. Yet, our society requires only about 15 percent of its people possess a college degree, and this is about the percentage graduating from our State colleges and universities. Stated differently, more than 98 percent of the total educational funds *available* at the State level for public school education are allocated to preparing students for the college most of them will never reach, and less than two percent in preparing them for the world of work the vast majority will enter on leaving school—with or without a high school diploma. This is not to be interpreted as a criticism of general education or as recommending a shifting of present funds; rather it shows the need for increased funding with a significantly higher portion going to meet the needs of vocational education.

To accomplish this goal of a more equitable distribution of tax funds, some severe changes in our attitudes towards the concept of education must take place.

Unfortunately, when one talks of education it is in a dualistic manner. On the one hand there are college preparatory courses and colleges; on the other hand there are vocational programs and technical schools. The former generally occupies a false position of having a higher value or social significance.

This Council feels that no change can be effected which will upgrade the quality and quantity of vocational programs under the present system. As long as vocational education remains subservient to the academic disciplines, we will make no progress. The time is now for vocational education to be recognized as honorable, worthwhile, and as demanding of one's intellect as are academic programs.

In the area of adult vocational education, the Council commends the Arkansas Industry Training Program for accomplishing excellent results. In the short term of this agency's existence, it will complete training of 2,000 people at a cost of only $158.00 per person.

In terms of State tax dollars, the cost has been about $37.00 per person. It has been conservatively estimated that these people will return to the State $26.00 per person in State taxes the first year they are employed. In addition, this program has reached those most in need of skill training and employment–the unemployed, the underemployed and persons on welfare, and it has reached all segments of our society.

The Arkansas Industry Training Program operates on a very modest budget at present, and has made a very realistic and reasonable request for an increased appropriation for the next biennium.

Unlike many of the academic disciplines, maintaining a vocational class or program is expensive. The cost of equipment and instructional supplies often prohibits establishing such programs in many areas. This Council feels that one way to maximize the equipment usage and minimize the cost of supplies is through centralized control of equipment and materials purchases and usage. Much equipment and/or materials needed by the area schools and other adult training programs could be controlled on a "need" basis. The demand for certain courses is bound to vary from one area to another and from one year to the next. For example, one school may have a need for 10 metalworking lathes one year, but only five the next. At the same time, the situation could be reversed at another school. Such equipment problems could easily be met by centralized equipment and material control. In addition, it would reduce the need to overstock (or work to fill courses no longer needed at previous levels), and provide greater flexibility in planning and in adjusting courses and course schedules.

Finally, this Council looked carefully into the concept of mobile training units currently on the market. It concluded that the concept of such training units could readily and effectively be applied to adult vocational training. Virtually every area of adult training could be taught in mobile units, from basic adult education through machine shop, electronics, and key punch operations. If, however, such a system of training is instituted in Arkansas, it could be implemented most economically and effectively by utilizing mobile training units for orientation to the world of work and introduction to the various occupations at elementary and secondary schools during regular school hours, and making the units available for adult courses evenings and weekends. Furthermore, a continuing evaluation must be made of the overall program to insure that maximum applicability and economical use of equipment is obtained.

2422

Recommendations:

(1) That substantially increased funding be provided for vocational education.

(2) That a continuing review and evaluation of curriculums be instituted–with the advice and assistance of professional personnel and industry and business representatives, by fields of expertise or knowledge–with the objective of discontinuing courses no longer needed, instituting new courses, and keeping programs as "up-to-date" as possible.

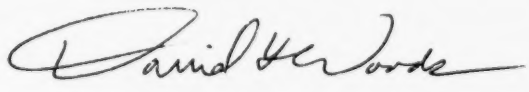
(3) That the State Board of Education create a Joint Education Study Task Force with the objective of determining the most equitable distribution of monies, reviewing existing laws and practices, and preparing recommendations for the State Board of Education.

(4) That the Board endorse full funding of the Industry Training Program over the next biennium. It is further recommended that there be an expansion of the program in subsequent bienniums.

(5) That the State Department of Education establish a centralized control over equipment and materials purchases and usage.

(6) That the concept of a system of mobile training units be adopted and that these units be purchased in needed areas of training for use in both the public school system and for adult training.

Respectfully submitted,



Daniel H. Woods
Chairman

VT 019 700

VT 019 700
FOLLOW-UP STUDY OF OCCUPATIONAL-TECHNICAL STUDENTS AT VIRGINIA COMMUNITY COLLEGES: A PROGRESS REPORT.

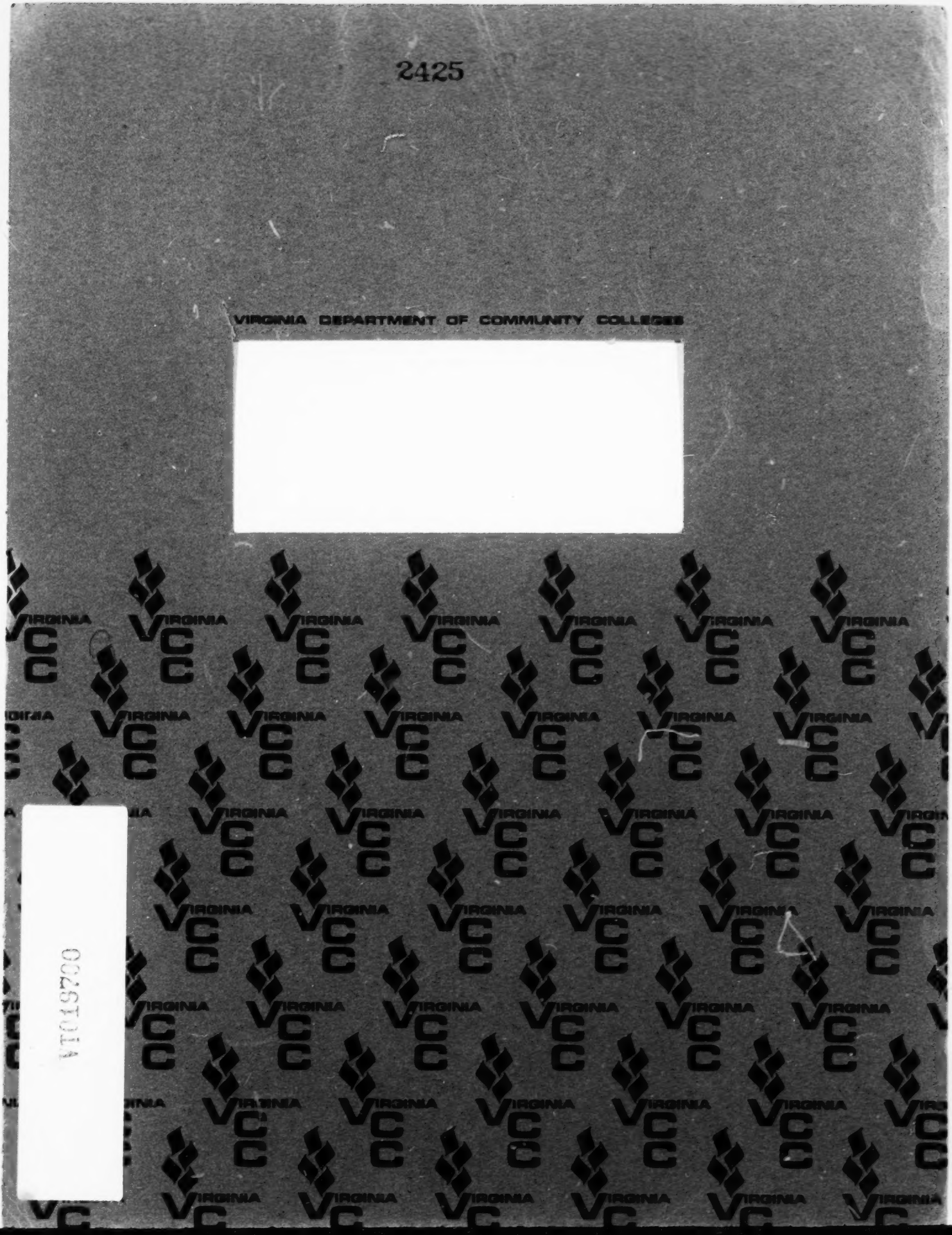
VIRGINIA STATE DEPT. OF COMMUNITY COLLEGES, RICHMOND. DIV. OF RESEARCH AND PLANNING.
VIRGINIA STATE DEPT. OF EDUCATION, RICHMOND. DIV. OF VOCATIONAL EDUCATION.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 1FEB73 38P.

DESCRIPTORS - *FOLLOWUP STUDIES; STUDENTS; *COMMUNITY COLLEGES; *VOCATIONAL EDUCATION; TECHNICAL EDUCATION; *PROGRAM EFFECTIVENESS; *GRADUATE SURVEYS; POST SECONDARY EDUCATION; PROGRAM ATTITUDES
IDENTIFIERS - *VIRGINIA COMMUNITY COLLEGES

ABSTRACT - TO GATHER INFORMATION REGARDING THE EMPLOYMENT STATUS AND RELATED ACTIVITIES OF FORMER GRADUATES AND NONGRADUATES SINCE LEAVING COLLEGES IN THE VIRGINIA COMMUNITY COLLEGE SYSTEM AS WELL AS TO GET SOME IDEA AS TO HOW FORMER STUDENTS FELT ABOUT CERTAIN ASPECTS OF THEIR COLLEGE EXPERIENCES AND THE EXTENT SUCH EXPERIENCES WERE BENEFICIAL TO THEIR CAREER DEVELOPMENT, 3,422 OCCUPATIONAL-TECHNICAL GRADUATES AND 8,201 NONGRADUATES WERE SURVEYED. PRELIMINARY FINDINGS INCLUDE: (1) GRADUATES, MORE THAN NONGRADUATES, REPORTED FULL-TIME EMPLOYMENT, (2) ABOUT NINE-TENTHS OF THE FORMER STUDENTS WERE EMPLOYED IN EITHER VIRGINIA OR WASHINGTON, D.C., (3) AS MANY AS EIGHT-TENTHS OF THE GRADUATES REPORTED SOME CONGRUENCE BETWEEN THEIR CURRENT EMPLOYMENT POSITION AND THE PROGRAMS THEY COMPLETED, (4) GRADUATES WITH ASSOCIATE DEGREES OR DIPLOMAS REPORTED MUCH HIGHER SALARIES THAN DID CERTIFIED GRADUATES, (5) ONE PERCENT OF COMMUNITY COLLEGE NONGRADUATES EARNED A BACHELORS DEGREE, (6) GENERALLY, FORMER STUDENTS' CONTINUAL EDUCATION PROGRAMS WERE RELATED TO THEIR COMMUNITY COLLEGE PROGRAMS, (7) TECHNICAL KNOWLEDGE, GENERAL EDUCATION AND JOB SKILLS WERE RATED HIGHEST AS PREPARATORY EXPERIENCES BY GRADUATES, AND (8) BOTH GRADUATES AND NONGRADUATES RATED GENERAL EDUCATION AND HUMAN RELATIONS AS MOST VALUABLE. (AUTHOR/SN)

2425

VIRGINIA DEPARTMENT OF COMMUNITY COLLEGES



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FOLLOW-UP STUDY OF FORMER OCCUPATIONAL-TECHNICAL STUDENTS AT VIRGINIA COMMUNITY COLLEGES: A PROGRESS REPORT

Prepared by

Fred A. Snyder
Project Director

Ted O. Gustilo, Jr.
Research Associate

Division of Research and Planning
Virginia Department of Community Colleges
Richmond, Virginia 23212

February 1, 1973

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FOLLOW-UP STUDY OF FORMER OCCUPATIONAL-TECHNICAL STUDENTS AT VIRGINIA COMMUNITY COLLEGES: A PROGRESS REPORT

This is a report on the status and progress of a follow-up study of former students who had been enrolled in occupational-technical programs at Virginia community colleges. The report includes an overview of the study, a review of project activities and accomplishments through June 1972, selected preliminary findings, and the status of a series of research reports. Appended to this report are samples or copies of instruments and other related materials employed in the study.

The study was supported substantially with research funds administered by the Division of Vocational Education, Virginia State Department of Education. Of the original grant of $53,844, just $35,088 was expended by the end of fiscal year 1972.

An Overview of the Study

Statement of the Problem

Since its inception in 1966, the Virginia Community College System has been rapidly expanding in student enrollments, educational programs, staff, and facilities. From 1966 to 1971, the system has graduated 6,146 students, of which 4,783 have been in occupational-technical programs. An even larger number of students discontinued attendance at the colleges without completing their intended programs of study. During fall 1971, about 35,000 students were enrolled in occupational-technical and college transfer programs, and by 1980 enrollments are expected to more than double. A high proportion of these enrollments will continue to be in occupational-technical programs.

During the period of the 1970's, huge sums will be required to provide additional educational programs, staff, and facilities for expanding enrollments. Ideally, planning for this expansion should be based upon awareness of information about students and potential students and their occupational needs, and the activities of former students after they leave the community college. Comprehensive and accurate information about former students who were enrolled in occupational-technical programs at Virginia community colleges did not exist prior to this study. Although studies about occupational-technical graduates and non-graduates have been conducted at several of the Virginia community colleges, these studies were few in number and difficult to bring together and evaluate as a group. A review of these completed studies was presented in the original proposal. More information was needed about employment status and related activities of former graduates and non-graduates since leaving the colleges, and how former students felt about certain aspects of their college experiences and the extent such experiences were beneficial to their career development.

Purpose and Objectives

It was the purpose of this study to describe former occupational-technical students at the Virginia community colleges, and their achievements and activities in college and in subsequent employment. Data were collected and examined which relate to student characteristics, post-college activities, and reactions toward their college experience and current employment. Within the limits of this study, data were collected which will contribute toward understanding student retention patterns. It was intended that data be examined separately for curricular groups

and for graduates and non-graduates. More specifically, the study was designed with the following major objectives in mind:

1. To identify selected personal and demographic characteristics of former students in occupational-technical programs.
2. To identify post-college activities of former students.
3. To study the attitudes of former students toward their community college experience and current employment.
4. To study patterns of student retention and withdrawal.
5. To examine differences among graduates and non-graduates, and among the several types of graduates in terms of their characteristics, post-college activities, and personal evaluations of college experience and employment.

Each objective was further defined in terms of specific research questions, as follows:

Selected characteristics of former students

1. What are the characteristics of former students in terms of age, sex, marital status, race, and academic achievements - e.g. type of degree completed to date, type of curriculum last enrolled in or completed, cumulative GPA and total number of credits earned?

Employment and related post-college activities

2. What types of employment activities and other post-college endeavors have they engaged in since leaving the community colleges?
3. What proportion have engaged in activities directly related to their community college training and education?
4. What were their salaries - initially upon leaving the community college, and present salaries?

5. What proportion have found employment within their home localities or within Virginia?

6. What proportion have continued their education beyond the community college, and how consistent with the community college program was such continued education?

Evaluations by former students toward their community college experience and current employment

7. How do they feel about certain aspects of their college experience such as instruction, curriculum, facilities, social activities, college environment, and counseling and placement services?

8. How do they feel about their present employment in such matters as salary, nature of their work, relations with co-workers, and opportunity for growth?

9. What factor(s) influenced students to attend community colleges or enroll in specific occupational-technical programs?

Retention and Withdrawal Patterns

10. How do retention and withdrawal rates of occupational-technical students vary among programs and type of degree earned?

11. What are the reasons why non-graduates did not complete their community college program?

12. What were the initial educational goals of non-graduates when they first attended the community college and were those goals achieved?

13. What proportion of the students eventually completed an initially chosen program? What proportion of the students

changed programs? Among those who made the change, what reason(s) did they give for making such a change?

Differences between graduates and non-graduates, and among graduates

14. What differences exist between graduates and non-graduates of various programs and levels of graduation in their:

    a. selected personal and social characteristics and prior academic achievement?

    b. employment activities such as starting and current salary, types of job positions, and location of employment?

    c. educational activities after leaving the community college?

    d. evaluations or attitudes toward certain aspects of their community college education?

    e. attitudes toward certain aspects of current employment?

The Study Population

The population consisted of all former students at the Virginia community colleges who were enrolled at any time from fall 1966 through fall 1969 in occupational-technical curricula, either full-time or part-time. Both graduates and non-graduates were included. Graduates included those who earned associate degrees, diplomas, or certificates from 1966 through 1971. Students who were known to have changed curricula from occupational-technical areas were included, as well as students who were known to have changed from non-occupational-technical to occupational-technical programs during the same period.

In all, 3,422 occupational-technical graduates and 8,201 non-graduates were identified by thirteen colleges. A list of these colleges is shown in Appendix A. Other community colleges which opened after 1969 were not included.

Procedure

This section reviews the activities and accomplishments of the project during the period of January 24, 1972 through June 30, 1972. During this period, the project activities included identification of the study population, development of data instruments and other related materials, collection of data, processing of data, and preparation of data outputs.

Identification of the Study Population

As mentioned earlier, there was no accurate and comprehensive information about former occupational-technical students that could be readily retrieved and processed. The student permanent records at each college were recognized as the only source for identifying former students who qualified for inclusion in the study and for collecting pertinent data about these students.

A college data form was devised (Appendix B) as a means for capturing the selected personal and academic data about each former student. Data codes and instructions for recording data from the student permanent record were also developed (Appendix C).

A one-day workshop was held to instruct selected college personnel in the proper procedure for identifying former students who belonged in the study population and for recording related data.

The data provided by the colleges were then converted to a computer file. From this file, name and mailing address labels were prepared for mailing questionnaires to the former student population.

Instrumentation

Two instruments were developed for collecting information on former students' personal background, academic achievements, post-college activities, and evaluation of college experience and current employment. Each of these instruments are described below.

The college data form (Appendix B) was employed as a means for identifying qualified former students and also for recording student's name, social security number, mailing address, sex, race, dates of enrollments, curriculum enrolled, number of credits earned, cumulative grade point average, and for graduates the type of degree earned and year of graduation.

A questionnaire (Appendix D) was designed to elicit information about former students' post-college activities and evaluations of college experiences and current employment. Questionnaire items were developed to provide specific answers to the research questions listed earlier in this report. The questionnaire was designed for conversion of questionnaire response data to computer tapes by optical scanning. Importantly, the optical scanning process reduces errors and expenses associated with keypunching.

Data Collection

The procedures for mailing the questionnaires and receiving completed questionnaires are described in the paragraphs which follow.

Questionnaire Mailing Procedure. Four mailing contacts were planned in order to get a satisfactory percentage of completed questionnaires. This elaborate follow-up procedure was believed necessary because some former students had been out of college since 1966. Due to the large number of subjects and the fact that four mailings were involved, all mailings were contracted to Custom Mailers and Consultants, Incorporated. This arrangement resulted in reduced costs due to automated procedures for addressing and processing mailing materials.

A coding system was developed to identify and separate completed questionnaires and undeliverable ones, and a computer programs was developed to distinguish respondents, non-respondents, and "undeliverable" subjects. This procedure eliminated redundant mailings.

The initial mailing consisted of a questionnaire and reply envelope. Six days after the initial mailing, postcards were mailed to remind former students to return the questionnaires, and to thank them if they already had done so (Appendix E). Six days after the postcard mailing, a copy of the original questionnaire, together with a cover letter and a reply envelope was sent to non-respondents. A sample of the cover letter is shown in Appendix F. The fourth and final mailing, consisting of a follow-up letter (Appendix G), was sent twenty-one days after the initial mailing. The follow-up letter reminded the student that his questionnaire had not yet been received and urged him to complete and return it promptly. The cut-off date for receiving returned questionnaires was set at seven weeks after the first mailing. The mailing sequence and dates are shown on the following page.

Mailing Sequence

Contact Number	Nature of Contact	Mailing Date	Contact Interval (in days)
1	Initial mailing of questionnaire	21 April	
2	Mailing of reminder postcard	27 April	6
3	Mailing of second questionnaire with cover letter	4 May	6
4	Mailing of final follow-up letter	11 May	8
	Cut-Off Date - 9 June		

The flow of completed questionnaires was recorded to show the effects of each mailing contact (Appendix H). The number of returned questionnaires increased notably following each successive mailing. Of the total completed questionnaires returned, about 20 percent were received nine days after the initial mailing. Also during this period, the great bulk of undeliverable envelopes were received. An additional 20 percent of completed questionnaires were returned immediately following the mailing of the postcard to all former students. The largest volume of completed questionnaires, 31 percent, were accumulated between the third and fourth mailing contact. An additional 15 percent were returned following the fourth and final follow-up. As expected, the flow of returned questionnaires decreased gradually until the cut-off date.

Clearly, the four-phase mailing and follow-up procedure was essential to a satisfactory rate of returns, and can be especially recommended in follow-ups of former students who have been out of college for several years.

Percent of Returns. Copies of the questionnaire were mailed to 11,623 former students, of which 3,442 were graduates and 8,201 non-graduates. Twelve percent of the questionnaires were undeliverable.

Classified as undeliverables were those returned by the post office as address unknown, and those returned by relatives with indication that the student was deceased or in the military service stationed overseas. From those who were assumed to have received the questionnaire, 61 percent returned usable completed questionnaires -- 73 percent for graduates and 56 percent for non-graduates, a highly satisfactory rate of return for this type of study.

Non-Response Bias

As a check on non-response bias, a five percent sample from the pool of non-respondents within each college was randomly selected for follow-up telephone interviews. The interviews were made by selected personnel from each college.

Prior to the conduct of the telephone interviews, a one-day workshop was held to train interviewers on the procedures and techniques of interviewing. The workshop included a simulated situation where each prospective interviewer was given the opportunity to act as interviewer and interviewee. A set of standard instructions was also provided as a guide for conducting the interviews. The workshop and written instructions provided for uniform procedures for collecting and recording the responses from the telephone interviewees.

A telephone interview instrument (Appendix I) was designed for use by interviewers to obtain information about selected items from the original questionnaire.

Tests for differences between respondents and non-respondents were based on selected items from the questionnaire and from the data supplied by the colleges. The results of Chi-square analyses showed only minor differences between the two groups, in terms of demographic

background, post-college activities, and evaluations of college experience and employment. Thus, it is assumed that the collected data reflected accurately the conditions for the entire population in the study.

Data Processing and Outputs

All data processing for the study, except the conversion of the data from the questionnaire to magnetic tapes, was completed by the Computer Center of the Virginia Department of Community Colleges. The conversion of the data from the questionnaires to computer tapes was contracted by National Scanning Incorporated. Data from the questionnaire and the college data form were then merged to form a master file.

Outputs. Three types of data outputs have been generated from the master file to include (1) several summaries for each college and aggregate summaries for all colleges; (2) alphabetical student-by-student computer listings, with all data elements from both the questionnaire and college data form included for each college; and (3) punched card decks or magnetic tape records which contained similar sets of data as the student-by-student listings for each college. A list of the data summaries and other data outputs is provided in Appendix J.

The data summaries were developed as bases for analyzing and describing the personal and demographic characteristics of former students, their community college academic achievements, post-college activities, and evaluations of college experiences and employment. The data summaries were further broken by sex, race, curricular clusters and groups, year of graduation, types of curriculum completed, types of award received, and related factors.

Preliminary Findings

A brief preliminary report has been prepared to describe the findings of the study. The report was prepared for internal use by the Community College Department rather than for public dissemination. Portions of the report are provided in the following paragraphs.

Post-College Activities

The distribution of post-college activities of former students is shown separately for graduates and non-graduates as follows:

	Graduates	Non-Graduates
Full-time employment	80%	69%
College full-time	6%	9%
Military service	4%	6%
Part-time employment	3%	6%
Housewife	3%	5%
Unemployed and other	4%	5%

Graduates, more than non-graduates, reported full-time employment. Non-graduates more frequently reported full-time college attendance, military service, and housewife status.

Location of Employment. About nine-tenths of the former students were employed in either Virginia or Washington, D. C. (about 5 percent in D. C.), and about eight-tenths work within 50 miles of the college they had attended. Non-graduates were employed somewhat more locally than graduates.

Job Congruence With Curriculum. Students were asked to indicate the extent to which their present jobs were related to their previous community college programs. Eight-tenths of the graduates reported very much or some congruence between their current employment and

the programs they completed. Job congruence for non-graduates was notably less then for graduates.

Salaries. Average salaries reported by graduates and non-graduates are shown for both initial jobs and current jobs. These data must be interpreted with caution in the absence of more detailed analyses because of effects introduced by variables of sex, educational programs, job fields, and others.

Type of Graduates	Average Salaries: Initial Jobs	Current Jobs
AAS	$5,780	$7,310
Diploma	5,690	7,250
Certificate	3,870	4,800
Non-Graduates	5,480	7,410
Overall	5,420	7,160

Graduates who earned associate degrees or diplomas reported much higher salaries than certificate graduates. Non-graduates' salaries were similar to those of associate degree graduates, a finding that warrants further analysis. Expectedly, average salaries for current jobs were much higher than for initial jobs.

Job Satisfaction. Former students were asked to rate five aspects of their jobs as superior, good, fair, or poor. Ratings of superior or good by respondents are shown in the following tabulation. Overall, graduates and non-graduates agreed in their ratings.

Job Aspects	Rating of Superior or Good
Challenging and interesting work	76%
Relations with colleagues	86%
Salary	57%
Opportunity for advancement	53%
Overall aspects of your job	72%

Extent of Continued Education. There were some differences in the patterns of further education reported by graduates and non-graduates. Among graduates, 22 percent participated in employer training programs, 13 percent attended four-year institutions and 5 percent were still enrolled at the community colleges. Four percent earned an associate degree (presumably after first earning a certificate or diploma) and three percent earned a bachelors degree. The continued education pattern for non-graduates was different in that fewer attended four-year colleges (8 percent) and many more (22 percent) continued to attend a community college. Just one percent of community college non-graduates earned a bachelors degree.

Relatedness of Later Study. Generally, former students' programs of continued education were related to their earlier community college programs, somewhat more so for graduates than non-graduates. Over eight-tenths of the graduates' later studies were very much or somewhat related to their previous community college programs.

Evaluations of College Experience

Only a small proportion of former students used the college placement assistance in securing their first job after leaving the community college, as shown in the following tabulation. However, graduates used college assistance much more than did non-graduates. Relatives, friends, or other sources were listed by over half the respondents as their most helpful source of assistance.

Sources Most Helpful In Getting First Job	Graduates	Non-Graduates
College placement center	8%	2%
Faculty members	10%	2%
Employer contact at college	11%	3%
Others	24%	32%
Relative or Friend	32%	43%
Newspaper Ads	10%	13%
State Employment Service	5%	5%

Quality of College Preparation. Former students were asked to rate how well the community college prepared them in seven aspects of learning. Results are shown separately for graduates and non-graduates in the tabulation which follows. Graduates rated technical knowledge, general education, and job or learning skills highest. Comparatively, non-graduates rated technical knowledge and job or learning skills notably lower than graduates. Non-graduates' ratings were lower, overall.

	Percent Rating as Superior or Good	
Educational Aspect	Graduates	Non-Graduates
Technical knowledge and understanding	85%	71%
Job or learning skills	79%	66%
Getting along with people	77%	72%
Self-understanding	70%	65%
Knowledge about career opportunities in your field	56%	50%
Communication skills	68%	66%
General education	84%	79%

Value of College Preparation. In rating the value of these same aspects of their community college education at the time of the survey, both graduates and non-graduates rated general education and getting along with people as most valuable. These findings are of unusual interest, and will be explored further in subsequent investigations of the data.

Both graduates and non-graduates overwhelmingly endorsed their community college experience. Nine-tenths of both groups answered "yes" (rather than "no") to the question, "Would you recommend the community college to a person seeking to complete the same program you studied?"

Projected Activities

As shown earlier, extensive data summaries have been completed. What remains is to analyze the data and report the findings.

In the original proposal a series of four research reports were designated for publication and dissemination. Three of these reports were to treat separate topics associated with the findings on the personal and socio-economic characteristics and academic achievements of former students, including their post-college activities and evaluations of college experiences and current employment. A report on retention and withdrawal patterns among former occupational-technical students was also planned. However, additional information and analysis are needed in order to complete the latter report.

A second proposal entitled Follow-Up Study of Former Occupational-Technical Students at Virginia Community Colleges: Phase Two has been approved by the Division of Vocational Education, Virginia Department of Education, with a research grant of $9,471 for the 1972-73 fiscal year. The objective of that proposal was to complete the three research reports. Each of these reports will be written by an experienced community college educator within the designated period of time. The qualifications of these three prospective authors have been described in the second proposal. The descriptive titles of these three reports are as follows:

Report No.	Title
1	Description and comparisons of former occupational-technical student's personal, academic, and socio-economic characteristics
2	Description and comparison of post-college activities of former occupational-technical students
3	Description and comparison of former occupational-technical students attitudes toward community college experience and current employment

The first report will focus on the description and comparisons of former occupational-technical students in terms of their biographical and academic characteristics. It will include comparisons of graduates and non-graduates, and of different types of graduates, within each curricular group. Reports #2 and #3 will follow a similar plan of analysis. Throughout these reports, the method of analysis will be descriptive. Each report will include implications of findings and recommendations related to occupational-technical programs and services. Comparisons of findings to those of other similar studies will be included.

These reports are expected to be available by summer 1973.

APPENDIX A

PARTICIPATING COMMUNITY COLLEGES

	Community Colleges	Location
1.	Blue Ridge	Weyers Cave, Virginia
2.	Central Virginia	Lynchburg, Virginia
3.	Dabney S. Lancaster	Clifton Forge, Virginia
4.	Danville	Danville, Virginia
5.	John Tyler	Chester, Virginia
6.	New River	Dublin, Virginia
7.	Northern Virginia	
	A - Central	Annandale, Virginia
	B - Eastern	Bailey's Crossroads, Virginia
8.	Southwest Virginia	Richlands, Virginia
9.	Thomas Nelson	Hampton, Virginia
10.	Tidewater	
	A - Frederick	Portsmouth, Virginia
	B - Virginia Beach	Virginia Beach, Virginia
11.	Virginia Highlands	Abingdon, Virginia
12.	Virginia Western	Roanoke, Virginia
13.	Wytheville	Wytheville, Virginia

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APPENDIX B

College _____ Code _____ [1]

Campus _____ Code _____ [2]

Person Completing Form _____

VIRGINIA COMMUNITY COLLEGE SYSTEM
DATA ELEMENTS FOR FORMER STUDENTS

PLEASE PRINT ALL ENTRIES

Date Prepared _____ [3] Page _____ of _____

[4] Social Security Number	NAME [5] Last	[6] First	[7] MI	HOME ADDRESS Number	[8] Street	[9] City	[10] State	[11] Zip	[12] Year of Birth	[13] Sex	[14] Home Residence	[15] Quarter Year First Enrolled	[16] Quarter Year Last Enrolled	[17] Curriculum First Enrolled	[18] Curriculum Last Enrolled	[19] Credits Earned	[20] Cumulative GPA	[21] Degree	[22] Year Graduated
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NOTE: Actual size of this form is 11" x 16 1/2"

APPENDIX C

INSTRUCTIONS

	Description of Data	Coding Instructions (Please Print All Entries)
1.	College Name and College Code	Print the Name and 3 digit code number for your college
2.	Campus Code	Campus Name and Code on each page of the Student Data Form
3.	Date Prepared and Page Number	Show date prepared and print page as Page 1 of 7, 2 of 7, 3 of 7, . . . 7 of 7
4.	Social Security Number	9 digit social security number
5.	Last Name	Self-explanatory
6.	First Name	Self-explanatory
7.	Middle Initial	Self-explanatory
8.	House Number/Street	Self-explanatory
9.	City or Town	Print full name of city or town in mailing address
10.	State	Print abbreviated name of state (See Code List 1)
11.	Zip	Print the 5 digit zip code
12.	Year of Birth	Print last 2 digits of year of birth (e.g.: for 1950 print 50)
13.	Sex	1 - Male, 2 - Female
14.	Home Residence	Show appropriate 3 digit code for county, city, out-of-state residence (See Code List 3)
15.	Quarter & Year 1st Enrolled	(See Code List 2)
16.	Quarter & Year Last Enrolled	(See Code List 2)
17.	Curriculum 1st Enrolled in	See Curriculum List - Code List 4
18.	Curriculum Last Enrolled in	See Curriculum List - Code List 4
19.	Total Credits Earned	Write total credits earned
20.	Cumulative GPA	Write Cumulative GPA (e.g. 3.33)
21.	Type of Degree Earned	1 - AA 2 - AS 3 - AAS 4 - Diploma 5 - Certificate (-) no degree
22.	Year of Graduation	1 - 1966-67 2 - 1967-68 3 - 1968-69 4 - 1969-70 5 - 1970-71 (-) no graduation

Code List 1

OFFICIAL ABBREVIATIONS OF STATES

Alabama	AL
Alaska	AK
Arizona	AZ
Arkansas	AR
California	CA
Colorado	CO
Connecticut	CT
Delaware	DE
Washington, D. C.	DC
Florida	FL
Georgia	GA
Guam	GU
Hawaii	HI
Idaho	ID
Illinois	IL
Indiana	IN
Iowa	IA
Kansas	KS
Kentucky	KY
Louisiana	LA
Maine	ME
Maryland	MD
Massachusetts	MA
Michigan	MI
Minnesota	MN
Mississippi	MS
Missouri	MO
Montana	MT
Nebraska	NE
Nevada	NV
New Hampshire	NH
New Jersey	NJ
New Mexico	NM
New York	NY
North Carolina	NC
North Dakota	ND
Ohio	OH
Oklahoma	OK
Oregon	OR
Pennsylvania	PA
Puerto Rico	PR
Rhode Island	RI
South Carolina	SC
South Dakota	SD
Tennessee	TN
Texas	TX
Utah	UT
Vermont	VT
Virginia	VA
Virgin Islands	VI
Washington	WA
West Virginia	WV
Wisconsin	WI
Wyoming	WY

Code List 2

CODES FOR QUARTER AND YEAR OF ENROLLMENT

	Quarter Code
Winter	1
Spring	2
Summer	3
Fall	4

	Year Code
Summer and Fall, 1966	66
Winter, Spring, Summer, and Fall, 1967	67
Winter, Spring, Summer, and Fall, 1968	68
Winter, Spring, Summer, and Fall, 1969	69
Winter, Spring, Summer, and Fall, 1970	70
Winter, Spring, Summer, and Fall, 1971	71

Example: A student whose 1st enrollment was Fall 1968 should be coded as 468.

Code List 3

COUNTIES AND INDEPENDENT CITIES IN VIRGINIA

	Counties		Counties		Cities
001	Accomack	049	King George	120	Alexandria
002	Albemarle	050	King William	130	Bedford
003	Alleghany	051	Lancaster	140	Bristol
004	Amelia	052	Lee	160	Buena Vista
005	Amherst	053	Loudoun	180	Charlottesville
006	Appomattox	054	Louisa	200	Chesapeake
007	Arlington	055	Lunenburg	220	Clifton Forge
008	Augusta	056	Madison	240	Colonial Heights
009	Bath	057	Mathews	260	Covington
010	Bedford	058	Mecklenburg	280	Danville
011	Bland	059	Middlesex	290	Emporia
012	Botetourt	060	Montgomery	300	Fairfax
013	Brunswick	061	Nansemond	320	Falls Church
014	Buchanan	062	Nelson	340	Franklin
015	Buckingham	063	New Kent	360	Fredericksburg
016	Campbell	064	Northhampton	380	Galax
017	Carolina	065	Northumberland	400	Hampton
018	Carroll	066	Nottoway	420	Harrisonburg
019	Charles City	067	Orange	440	Hopewell
020	Charlotte	068	Page	460	Lexington
021	Chesterfield	069	Patrick	480	Lynchburg
022	Clarke	070	Pittsylvania	500	Martinsville
023	Craig	071	Powhatan	520	Newport News
024	Culpeper	072	Prince Edward	540	Norfolk
025	Cumberland	073	Prince George	560	Norton
026	Dickenson	074	Prince William	580	Petersburg
027	Dinwiddie	075	Pulaski	600	Portsmouth
028	Essex	076	Rappahannock	620	Radford
029	Fairfax	077	Richmond	640	Richmond
030	Fauquier	078	Roanoke	660	Roanoke
031	Floyd	079	Rockbridge	680	Salem
032	Fluvanna	080	Rockingham	700	South Boston
033	Franklin	081	Russell	720	Staunton
034	Frederick	082	Scott	740	Suffolk
035	Giles	083	Shenandoah	760	Virginia Beach
036	Gloucester	084	Smyth	780	Waynesboro
037	Goochland	085	Southampton	800	Williamsburg
038	Grayson	086	Spotsylvania	820	Winchester
039	Greene	087	Stafford		
040	Greensville	088	Surry		
041	Halifax	089	Sussex		
042	Hanover	090	Tazewell	999	OUT-OF-STATE
043	Henrico	091	Warren		
044	Henry	092	Washington		
045	Highland	093	Westmoreland		
046	Isle of Wight	094	Wise		
047	James City	095	Wythe		
048	King & Queen	096	York		

MASTER CURRICULUM LIST AND CODE NUMBERS

Standard Code Number	Curriculum
	Business and Related Programs
203	Accounting Tech. and Accounting
209	Data Proc. (Computer Programming)
210	Data Proc. (Mach. and Computer Opr.)
212	Business Mgt. and/or Gen. Business
214	Data Proc. (Unit Records)
215	Data Proc. (Aux. Equip. Opr.)
216	Data Proc. (Keypunch)
218	Clerical Studies
235	Hotel, Restaur. and Inst. Mgt.
240	Hotel-Motel Management
241	Food Service Management
242	Institutional Management
252	Merchandising Mgt. and/or Gen. Merch.
272	Real Estate Management
275	Stenography
276	Secretarial Science
280	Traffic Management
	Communications and Media
513	Commercial Art and/or Media Adv. Arts
	Engineering and Related Programs
901	Architectural Tech. (Include Engr.)
902	Auto Analysis and Repair (Mechanics)
904	Air Conditioning and Refrigeration
905	Aeronautical Technology (Aviation) and/or Aircraft Maintenance
908	Auto Body Repair
909	Automotive Technology
910	Auto Diagnosis and Tune-Up
912	Auto Engine Mechanics
913	Chemical Technology
915	Civil Engineering Technology
916	Broadcast Engineering Technology
918	Costmetology
920	Diesel Mechanics
921	Draft. and Des. Tech. and/or Draft. and Des.
922	Drafting
923	Mechanical Drafting
924	Electrical Engineering Technology
925	Electronics Tech. and/or Electronics
926	Automotive Mechanic
927	Civil Technology
930	Architectural Drafting
931	Structural Drafting
937	Ind. Engr. Tech. and/or Ind. Mgt.
938	Instrumentation
941	Electrical Tech. and/or Electrical-Electronics Tech. and/or Electrical-Electronics Engr. Tech.
942	Electricity
943	Electrical-Electronics
944	Ind. Electricity and Electronics
945	Electromechanical Technology and/or Ind. Electromechanical Repair
947	Electronics Appliance Servicing
948	Electronics Servicing
949	Industrial Electronics
950	Machine Technology
952	Mach. Tool Operator (Operation)
953	Marine Technology
954	Masonry
955	Mechanical Engineering Technology
956	Mechanical Technology
957	Machine Operation
958	Machine Operator and Machinist
959	Machine Shop
960	Mach. Tool Maintenance and Repair
961	Tool-Making
962	Plumbing
963	Industrial Technology
964	Printing
966	Engineering Technical Assistant
972	Television and Radio Serv. and Rpr.
980	Sheet Metal
983	Textile Management
995	Welding
996	Carpentry
998	Mining Technology
999	Water Well Drilling Tech. and/or Water Well Drilling
	Health Services and Related Programs
117	Dent. Lab. Tech. and/or Dent. Assist
151	Medical Laboratory Technology
152	Medical Records Technology
154	Mental Health Technology
155	Mortuary Science
156	Nursing
157	Practical Nursing
172	Radiologic Technology
188	Animal Technology
	Public and Related Technology
176	Community and Social Serv. Tech. and or Comm. and Social Serv. Assist.
427	Fire Science and/or Firefighting
460	Recreation and Parks Leadership
463	Law Enforcement
464	Police Science and/or Corrections
468	Citizenship Development
828	Environmental Technology

Standard Code Number	Curriculum
	Miscellaneous
302	Agricultural Business Technology
328	Forest Technology
628	Teacher Aide
632	Library Aide
633	Audio Visual Aide
	College Transfer Codes
504	Art
213	Business Administration
648	Liberal Arts
555	Music
831	Pre-Engineering
625	Pre-Teacher Education
880	Science
	General
001	No Curriculum Area
002	General Education
003	Pre-Professional

APPENDIX D

FOLLOW-UP QUESTIONNAIRE

VIRGINIA COMMUNITY COLLEGE SYSTEM
SURVEY OF FORMER STUDENTS
SPRING, 1972

Dear Former Student:

Community colleges in Virginia are still in their early stages of growth, and we are searching for ways to improve our educational programs.

To help us, we ask you to complete this questionnaire. It requires information about your current activities and your earlier community college experience. It will require about 10 minutes of your time to complete. Your responses will be grouped with those of other former students, and will be used only for this study.

Please complete the questionnaire and return it to us within three days. A pre-addressed and stamped return envelope is enclosed for your convenience.

Thank you for your help.

Very truly yours,

Fred A. Snyder

Fred A. Snyder, Director
Research & Planning Division
Virginia Department of Community Colleges

DIRECTIONS:

USE PENCIL ONLY. MARK THE BOX ☒ OPPOSITE EACH ITEM THAT BEST REPRESENTS YOUR ANSWER(S). COMPLETELY ERASE ANY ANSWERS YOU WISH TO CHANGE.

(Please correct name and address if necessary)

1. (The following is needed as information about **equal opportunity** for education or employment.)

I consider myself as:

- ☐ White
- ☐ Black or Afro-American
- ☐ American Indian
- ☐ Oriental
- ☐ Spanish surnamed American
- ☐ Other (specify) _____

2. Show your **father's** and your **mother's** highest educational level.

	Father	Mother
Under 8 years	☐	☐
Completed 8th grade	☐	☐
Attended high school	☐	☐
High school graduate	☐	☐
Attended college	☐	☐
Four-year college graduate	☐	☐
Master's or higher degree	☐	☐

3. **Father's** type of work. If he is retired or deceased, refer to his former job.

- ☐ Clerical and Sales – bank teller, salesman, office or sales clerk, etc.
- ☐ Managerial or Office Occupations – office or sales manager, bank officer, etc.
- ☐ Professional – CPA, dentist, engineer, teacher, military officer, etc.
- ☐ Proprietor or Owner – farm owner, owner of a small business, etc.
- ☐ Semi-professional and Technical – engineering technician, dental technician, practical nurse, surveyor, etc.
- ☐ Semi-skilled worker – machine operator, bus driver, meat cutter, etc.
- ☐ Service worker – barber, policeman, waiter, fireman, etc.
- ☐ Skilled worker or foreman – baker, carpenter, electrician, foreman, etc.
- ☐ Unskilled worker – laborer, filling station attendant, farm worker, etc.
- ☐ Unemployed
- ☐ Unknown

CONTINUED ON NEXT PAGE →

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4. Your Marital Status.

- Single
- Married
- Other

5. Mark the **one** item that best describes your present employment or related status.

- Full-time employment
- Part-time employment
- College full-time
- Military service
- Housewife
- Unemployed
- Other (specify)_____

IF YOU HAVE NEVER BEEN EMPLOYED FULL-TIME SINCE LEAVING THE COLLEGE, GO DIRECTLY TO QUESTION 14.

6. Show the state in which you presently work.

- Virginia
- Maryland
- West Virginia
- North Carolina
- Tennessee
- District of Columbia
- Kentucky
- Another state (specify)_____

7. Show the approximate distance of your present employment from your former community college.

- Up to 25 miles
- 25 – 49 miles
- 50 – 99 miles
- 100 miles and over

8. Was the curriculum you were enrolled in at the community college related to your **first** job? Your **present** job?

	First Job	Present Job
Yes, very much		
Yes, somewhat		
No, or very little		

9. If your **present** job is not related to your community college curriculum, please check **each** reason which applies.

- Could not find a job in field of preparation
- Found better paying job in another field
- Preferred to work in another field
- Qualified for new job by continuing my education
- Was not sufficiently qualified for a job in my field of college preparation
- Other (specify)_____

10. Please indicate both your **initial** yearly salary upon leaving the community college and your **present** salary. (This information will not be identified with you as an individual, but will be grouped with that from other former students.)

Initial Salary	Present Salary
Up to $2,999	
$3,000 – 3,999	
$4,000 – 4,999	
$5,000 – 5,999	
$6,000 – 6,999	
$7,000 – 7,999	
$8,000 – 8,999	
$9,000 – 9,999	
$10,000 – 10,999	
$11,000 – 11,999	
$12,000 and over	

11. Please rate your satisfaction with your present job in terms of **each** of the aspects shown below. Mark **one** answer for **each** aspect.

	Superior	Good	Fair	Poor
a. Challenging and interesting work				
b. Relations with colleagues				
c. Salary				
d. Opportunity for advancement				
e. Overall aspects of your job				

12. Please mark the **one** source most helpful in getting your initial full-time job upon leaving the community college. Mark **one** only.

- Community college placement service
- College staff member other than a placement service
- Employer contact at the college
- State employment service
- Answered an advertisement
- Relative or friend
- Other (specify)_____

13. Please mark (X) **each** statement which shows your feelings about the help you obtained at the community college in getting your first job upon leaving.

- The placement office was helpful
- Faculty members were helpful
- Little help was given to me or others in my curriculum
- Faculty members were willing to help, but didn't seem to know what opportunities were available
- Job placement service was not adequate

ALL PERSONS SHOULD ANSWER QUESTIONS 14 THRU 22.

14. To what extent have you continued your education since leaving the community college? Mark **each** statement that applies.

- Still enrolled at the community college
- None
- Completed one or more employer training program
- Took courses at another two-year college
- Took courses at a four-year college or university
- Completed an associate degree
- Completed a bachelor's degree
- Completed master's degree or beyond
- Other (specify)_____

15. If you have continued your education since leaving the community college, please mark **each** reason for such further education or training which applies to you.

- To prepare for further job opportunities in my present occupation
- To improve my skills and abilities in my present job
- For my own general education and personal satisfaction
- To change occupation
- It is expected of me by my employer
- Other (specify)_____

16. Was the curriculum you were enrolled in at the community college **related** to your later study, if you have continued your education?

Yes, very much — No, or very little

Yes, somewhat

17. Did you at any time change from one curriculum to another while at the community college?

Yes — No

18. If your answer to question 17 was **Yes**, please mark the reason(s) for changing your curriculum as noted below.

- Dissatisfied with curriculum
- Dissatisfied with instruction
- Low achievement
- Loss of interest
- Personal problem
- Little opportunity in this field
- Parents objected
- Counselor's advice
- A wrong choice of curriculum in the first place
- Changed career goal(s)
- Other (specify)_____

19. Would you recommend the community college to a person seeking to complete the same program you studied? — Yes — No

20. How well did the community college **prepare** you in each of the following aspects? Mark only **one** answer for **each** aspect.

	Superior	Good	Fair	Poor
a. Technical knowledge and understanding				
b. Job or learning skills				
c. Getting along with people				
d. Self-understanding				
e. Knowledge about career opportunities in your field				
f. Communication skills (oral or written)				
g. General education				

012134

21. How **valuable** are each of these aspects of your community college education to you now? Mark only **one** answer for **each** aspect.

	Highly Valuable	Valuable	Some Value	Little or No Value
a. Technical knowledge and understanding				
b. Job or learning skills				
c. Getting along with people				
d. Self-understanding				
e. Knowledge about career opportunities in your field				
f. Communication skills (oral or written)				
g. General education				

22. Please give your opinion about each of the following aspects of your community college experience. Mark only **one** answer for **each** aspect.

	Superior	Good	Fair	Poor
a. Shop and laboratory instruction				
b. Academic instruction				
c. Shop and laboratory facilities and equipment				
d. All other college facilities				
e. Counseling given to students				
f. Social activities				
g. Interest in students shown by faculty				
h. Evaluation of students' performance by faculty				
i. Overall				

ONLY THOSE WHO EARNED A CERTIFICATE, DIPLOMA, OR ASSOCIATE DEGREE SHOULD ANSWER QUESTION 23.

23. In every occupational-technical curriculum, there is a **"mix"** of courses in (a) applied technical and skills preparation and (b) general education. Please show the proportional "mix" of such courses that you would like to see in your curriculum at your community college.

- ☐ O.K. as is. Don't change it.
- ☐ Increase the proportion of courses in technical and skills areas.
- ☐ Increase the proportion of courses in general education.

ONLY THOSE WHO DID NOT COMPLETE AN EDUCATIONAL PROGRAM AT THE COMMUNITY COLLEGE SHOULD ANSWER QUESTIONS 24 THRU 27.

24. What was your **primary educational goal** when you initially enrolled at the community college? Mark **one** only.

- ☐ Earn a certificate or diploma to improve my employment and career skills.
- ☐ Earn an associate degree or a higher degree
- ☐ Upgrade technical knowledge and skills in specific fields by taking just one or several courses
- ☐ Increase my general knowledge and level of education
- ☐ Other (specify)

25. Was the goal you noted above achieved before you left the community college?

☐ Yes ☐ No

26. What **principal reason(s)** made you decide to discontinue attendance at the community college? Mark **each** that applies.

- ☐ Employment
- ☐ Marriage
- ☐ Entered military service
- ☐ Lack of financial support
- ☐ Transferred to another college
- ☐ Moved to another area
- ☐ Lack of transportation
- ☐ Completed my educational goal
- ☐ Personal adjustment problem
- ☐ Lack of interest
- ☐ Low achievement
- ☐ Change in educational goal
- ☐ Other

27. Do you intend to return to a community college for additional work?

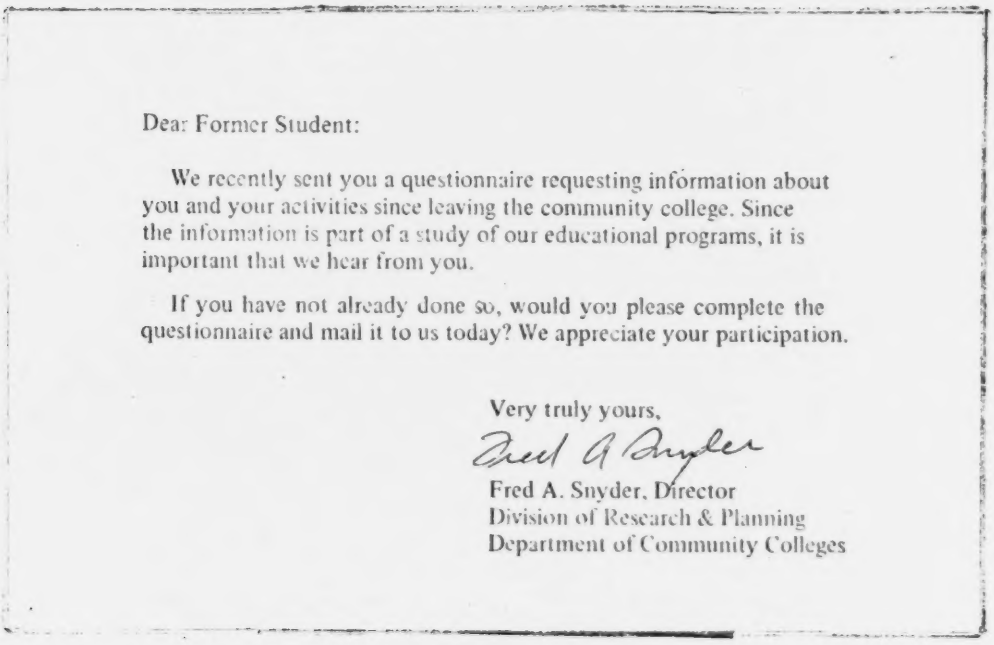
☐ Yes ☐ No

APPENDIX E

REMINDER POSTCARD

VIRGINIA COMMUNITY COLLEGE SYSTEM
VCC
911 EAST BROAD STREET, P. O. BOX 1558, RICHMOND, VIRGINIA 23212
OFFICE OF RESEARCH AND EVALUATION

FRONT SIDE


Dear Former Student:
We recently sent you a questionnaire requesting information about you and your activities since leaving the community college. Since the information is part of a study of our educational programs, it is important that we hear from you.
If you have not already done so, would you please complete the questionnaire and mail it to us today? We appreciate your participation.
Very truly yours,
Fred A. Snyder, Director
Division of Research & Planning
Department of Community Colleges

BACK SIDE

APPENDIX F

COVER LETTER

VIRGINIA DEPARTMENT OF COMMUNITY COLLEGES

May 1972

Dear Former Student:

We recently sent you a questionnaire requesting information about you and your activities since leaving the community college. We have not received your response, and it is important that we do. Therefore, we are enclosing another copy of the questionnaire and a pre-addressed, postage-paid return envelope for your convenience.

If you have not completed the questionnaire, please fill in the enclosed copy and mail it to us immediately. All responses will be treated as confidential and will be used only for research purposes. We appreciate your cooperation.

Very truly yours,

Fred A Snyder

Fred A. Snyder
Director, Division of Research & Planning

APPENDIX G

FINAL FOLLOW-UP LETTER

VIRGINIA DEPARTMENT OF COMMUNITY COLLEGES

May 1972

Dear Former Student:

We recently sent you a questionnaire relating to a study of former students at Virginia community colleges. If you have not already completed this questionnaire and returned it to us, would you please take ten minutes to do so now?

The purpose of the questionnaire is to obtain information about your activities and feelings about your community college experience. Each bit of information will be used to evaluate how well the community colleges provide high-quality education to students. Please help us by returning the completed questionnaire today!

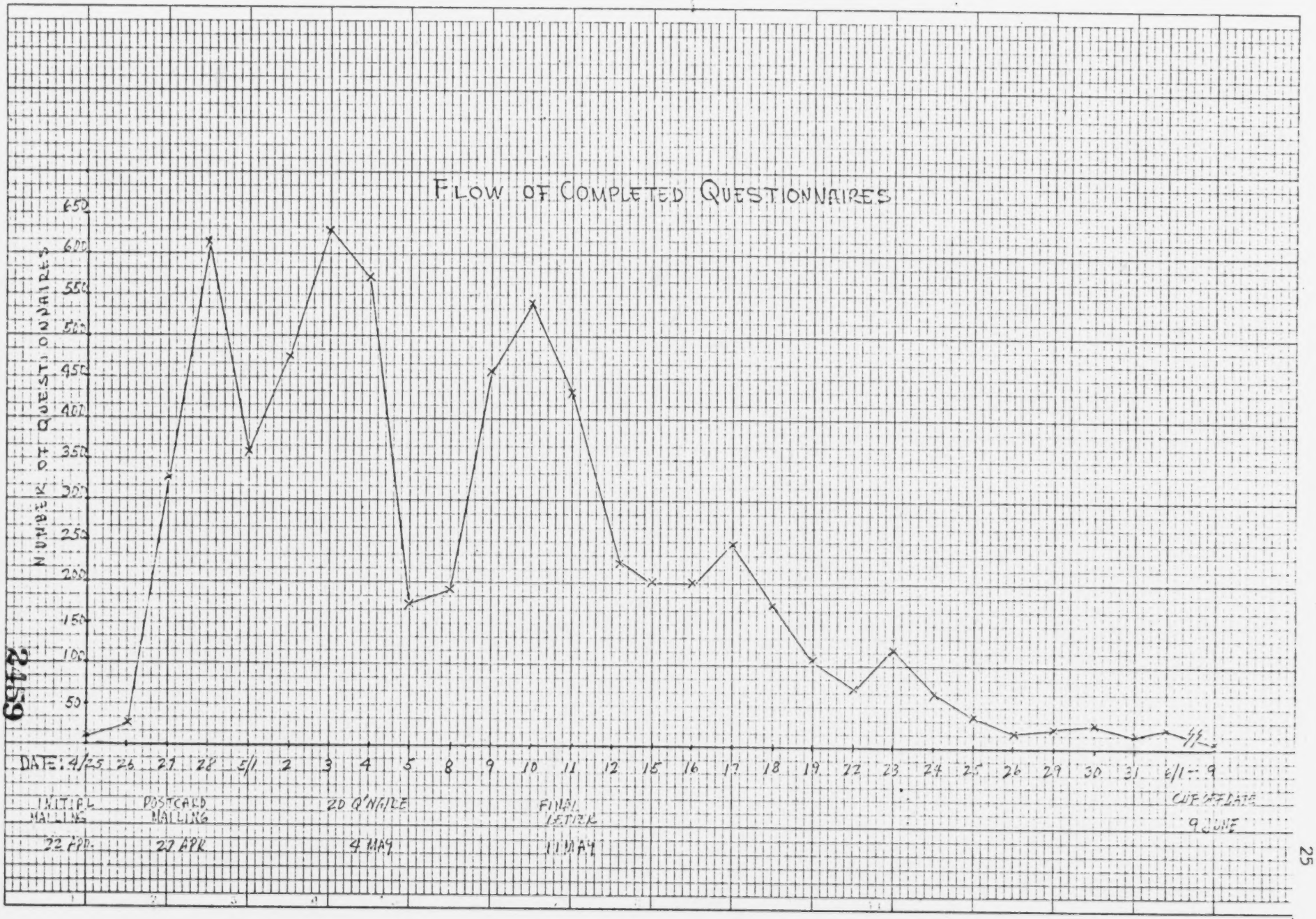
Your response will be treated in strictest confidence and used with those from other former students for this study only.

Very truly yours,

Fred A. Snyder

Fred A. Snyder, Director
Division of Research and Planning
Department of Community Colleges

FAS:TOG:vks


FLOW OF COMPLETED QUESTIONNAIRES
NUMBER OF QUESTIONNAIRES
650
600
550
500
450
400
350
300
250
200
150
100
50
DATE: 4/25 26 27 28 5/1 2 3 4 5 8 9 10 11 12 15 16 17 18 19 22 23 24 25 26 29 30 31 6/1-9
INITIAL MAILING
22 APR.
POSTCARD MAILING
27 APR
20 Q'NAIRE
4 MAY
FINAL LETTER
11 MAY
CUT-OFF DATE
9 JUNE

2459

APPENDIX I

VIRGINIA COMMUNITY COLLEGE SYSTEM
SURVEY OF FORMER STUDENTS
TELEPHONE INTERVIEW
Spring, 1972

DIRECTIONS: INDICATE THE ANSWERS BY WRITING THE APPROPRIATE NUMBER IN THE BLANK SPACE ON THE LEFT. WHERE THE INTERVIEWEE REFUSES TO RESPOND TO A SPECIFIC QUESTION, THEN JUST LEAVE THE SPACE BLANK AND PROCEED TO THE NEXT QUESTION. BEGIN TELEPHONE CONVERSATION:

I am (state your name & position) from (state name of college). As part of a survey of former students of (state name of community college), we mailed you a questionnaire to obtain information about your activities and opinions. Since we did not get a response from you, would you please help us by answering a few questions which appeared on the original questionnaire? It should take just three minutes. Let me assure you that your answers will be held in strictest confidence.

(2) What is the highest educational level completed by your father? (Pause for response) Your mother? (Use the answer given to select the appropriate number. Write this number in the blank space.)

___Father
___Mother

1 Under 8 years
2 Completed 8th grade
3 Attended high school
4 High school graduate
5 Attended college
6 Four-year graduate
7 Master's or higher degree

___(5) What is your present employment or school status? Are you employed full-time, part-time, or what? (Accept only one answer.)

1 Full-time employment
2 Part-time employment
3 College full-time
4 Military service
5 Housewife
6 Unemployed
7 Other (specify)_____

___(5A) Have you ever been employed full-time since leaving the college?

1 Yes
2 No

IF THE RESPONSE IS NO, SKIP QUESTIONS 8, 10, AND 11, AND GO DIRECTLY TO QUESTION 19.

(8) How much was your community college curriculum related to your initial full-time job upon leaving the community college? (Read the three choices.) Your present full-time job?

___Initial
___Present

1 Very much
2 Somewhat
3 Very little

(10) Would you please give us an estimate of your salary in your first full-time job after leaving the community college? (Pause for response) Also your present salary?

___Initial
___Present

1 Up to $2,999
2 $3,000-3,999
3 $4,000-4,999
4 $5,000-5,999
5 $6,000-6,999
6 $7,000-7,999
7 $8,000-8,999
8 $9,000-9,999
9 $10,000-10,999
10 $11,000-11,999
11 $12,000 and over

___(11) ASK THIS QUESTION ONLY IF THE SUBJECT IS NOW EMPLOYED FULL-TIME. Please rate your satisfaction with your present job in terms of the overall aspects of the job. Enter only one response.

(a) Is your satisfaction: (1) Superior? (2) Good? (3) Fair? (4) Poor?

(continue on other side)

___(19) Would you recommend your community college to a person seeking to complete the same program you studied?

1 Yes
2 No

(20) I want you to rank as (1) SUPERIOR, (2) GOOD, or (3) POOR, how well the community college prepared you in terms of:

___(a) Technical knowledge and understanding

___(b) General education

(22) Using the same ranks of (1) SUPERIOR, (2) GOOD, (3) FAIR, and (4) POOR, will you please evaluate several more aspects of your community college experience? These include: (For each aspect enter only one response.)

___(a) Shop and Laboratory Instruction

___(b) Academic Instruction

___(e) Counseling given to students

___(f) Overall

FOR NON-GRADUATES ONLY. LOOK FOR THE CODE N AT THE RIGHT CORNER OF THE LABEL.

(26) Would you please tell me the principal reason or reasons which caused you to discontinue your attendance at the community college? Give two or three examples of possible reasons if necessary. (Check (x) each reason that the individual has given.)

___1 Employment
___2 Marriage
___3 Entered military service
___4 Lack of financial support
___5 Transferred to another college
___6 Moved to another area
___7 Lack of transportation
___8 Completed my educational goal
___9 Personal adjustment problems
___10 Lack of interest
___11 Low achievement
___12 Change in educational goal
___13 Other _____

Do you have some additional comments about your previous college experiences?

_____

_____

_____

We appreciate your help with our survey. I enjoyed talking with you (or something similiar).

END OF INTERVIEW. COMPLETE ADDED INFORMATION SHOWN BELOW

Check reason (s) for failure to conduct interview:

___1. Refused
___2. Deceased
___3. Military-Service-Overseas
___4. Civilian-abroad
___5. Already mailed questionnaire
___6. Other

INTERVIEWER'S NAME _____
(Please Print)

GENERAL INSTRUCTIONS TO INTERVIEWERS

1. Identify yourself and school (See interview sheet.)

2. Explain your mission (See interview sheet.)

3. Ask the questions verbatum from the sheet.

4. Should the individual not know how to respond appropriately, then give him examples from the questionnaire. Repeat the questions if necessary.

5. Mark the interviewee's responses on the interview sheet according to the specific instruction for each item. Ask clarifying questions if necessary.

6. DO NOT ENGAGE THE INTERVIEWEE IN A RUNNING DISCOURSE ABOUT HIS EXPERIENCES AT THE COMMUNITY COLLEGE OR ELSEWHERE. Tactfully stay with the questions.

7. Close the interview.

VIRGINIA COMMUNITY COLLEGE SYSTEM
SURVEY OF FORMER STUDENTS
TELEPHONE INTERVIEW
Spring, 1972

SUGGESTIONS FOR THE INTERVIEWER IF RESISTANCE IS MET IN THE FOLLOWING AREAS:

1. WHY THE STUDY?

   The information gathered will be used to get a better picture of our students and their reactions to experiences at college and later. We hope that this information will help us develop more effective programs to serve our students.

2. WHY THE TELEPHONE FOLLOW-UP?

   We are calling just a small proportion (5%) of those who did not return the questionnaire. We wonder if those who did not return the questionnaire had different opinions from those who did; and if so, in what ways. It adds to the study by making sure we have as broad a cross-section of answers as possible.

3. WHY DO YOU NEED TO KNOW MY SALARY?

   We are attempting to find out the ranges of initial salaries so we can better counsel students as to what they can expect in different entering positions. We are interested in your later salary to help us evaluate whether your training helped you progress in your job.

4. TOTALLY RESISTANT OR REFUSES TO RESPOND TO THE QUESTIONNAIRE.

   Tactfully close the interview as pleasantly as possible.

5. PARENT, SPOUSE OR BROTHER/SISTER STATES HE IS NOT HOME.

   Ask how to contact him now, or ask when he will return home. Assure them that you are going to take just 3 minutes to survey his college experiences. (Also, that you are not a salesman.)

6. PARENT, BROTHER OR SISTER STATES THAT HE DOESN'T LIVE THERE ANYMORE.

   Ask for his new number, even though it is far away (wherever, within USA). Again assure them that your purpose is to get some information about his college and later experience.

APPENDIX J

DATA SUMMARIES AND RECORD OUT-PUTS COMPLETED FOR O-T FOLLOW-UP STUDY

(as of October 13, 1972)

A. Summaries Related to Follow-Up Questionnaire Responses

Number	Summary Title
1	All Respondents Grouped by Sex and Race
2	All Respondents Grouped by Curricular Clusters
3	All Graduate Respondents Grouped by Sex and Race
4	All Graduate Respondents Grouped by Type of Degree Earned
5	All Graduate Respondents Grouped by Curricular Clusters
6	All Graduate Respondents Grouped by Year of Graduation
7	All Diploma Graduate Respondents Grouped by Year of Graduation
7-1	All Diploma Graduate Respondents Grouped by Sex Only
7a	All Certificate Graduate Respondents Grouped by Year of Graduation
7a-1	All Certificate Graduate Respondents Grouped by Sex Only
8	All Associate Applied Science Graduate Respondents Grouped by Year of Graduation
8a	All Associate Applied Science Graduate Respondents Grouped by Sex Only
9	All Non-Graduate Respondents Grouped by Sex and Race
9a	All Non-Graduate Respondents Grouped by Year Last Enrolled
10	All Non-Graduate Respondents Grouped by Six Curricular Clusters (Curriculum Last Enrolled)
*11	Distribution of All Non-Respondents (Graduates and Non-Graduates)
*11a	Status Distribution of Study Population by College
12	All Respondents Grouped by Curricular Groupings
13	All Diploma Graduate Respondents Grouped by Curricular Groupings
14	All Certificate Graduate Respondents Grouped by Curricular Groupings
15	All Associate Degree Graduate Respondents Grouped by Curricular Groupings

16 All Non-Graduate Respondents Grouped by Curricular Groupings (Curriculum Last Enrolled)

17 All Telephone Respondents Grouped by Sex

B. Summaries Related to Previous College Achievements

18 All Former Occupational-Technical Students Grouped by Sex

19 All Respondents Grouped by Sex and Race

20 All Graduate Respondents Grouped by Sex and Race

21 All Diploma Graduate Respondents Grouped by Sex and Race

22 All Certificate Graduate Respondents Grouped by Sex and Race

23 All Associate Applied Science Graduate Respondents Grouped by Sex and Race

24 All Non-Graduate Respondents Grouped by Sex and Race

*25 All Telephone Respondents Grouped by Sex

26 All Non-Respondents Grouped by Sex

27 All Graduate Non-Respondents Grouped by Sex

28 All Non-Graduate Non-Respondents Grouped by Sex

29 All Former Occupational-Technical Students Grouped by Six Curricular Clusters

30 All Graduate Respondents Grouped by Six Curricular Clusters

31 All Non-Graduate Respondents Grouped by Six Curricular Clusters (Curriculum Last Enrolled)

32 All Graduate Non-Respondents Grouped by Six Curricular Clusters

33 All Non-Graduate Non-Respondents Grouped by Six Curricular Clusters (Curriculum Last Enrolled)

34 All Graduate Respondents Grouped by Type of Degree Earned

35 All Graduate Non-Respondents Grouped by Type of Degree Earned

36 All Graduate Respondents Grouped by Year of Graduation

37 All Diploma Graduate Respondents Grouped by Year of Graduation

38 All Certificate Graduate Respondents Grouped by Year of Graduation

39 All Associate Applied Science Graduate Respondents Grouped by Year of Graduation

40 All Graduate Non-Respondents Grouped by Year of Graduation

*41 All Associate Applied Science Non-Respondents Grouped by Year of Graduation

C. Record Out-Puts

1 Alphabetic student-by-student listings that include all data elements derived from the student data form and the follow-up questionnaires, for each of the sub-groups listed below:

(1) All Questionnaire Respondents

(2) All Telephone Respondents

(3) All Non-Respondents

2 A complete data record in disc, tape or punched cards are available for each college upon request.

NOTE: Summaries marked by asterisk are for VCCS only.

VT 019 850

VT 019 850
VIRGINIA STATE ADVISORY COUNCIL ON VOCATIONAL EDUCATION'S THIRD ANNUAL REPORT.

VIRGINIA STATE ADVISORY COUNCIL ON VOCATIONAL EDUCATION, RICHMOND.
OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - NOV72 50P.

DESCRIPTORS - ANNUAL REPORTS; *ADVISORY COMMITTEES; *VOCATIONAL EDUCATION; LEGISLATION; *STATE SURVEYS; *PROGRAM EVALUATION; *EDUCATIONAL NEEDS; PROGRAM IMPROVEMENT
IDENTIFIERS - *VIRGINIA

ABSTRACT - THIS REPORT BY THE VIRGINIA STATE ADVISORY COUNCIL ON VOCATIONAL EDUCATION SUMMARIZES THE PROCEEDINGS AND ACHIEVEMENTS OF THE GROUP DURING THE 1972 PERIOD. DISCUSSED ARE: (1) CONSTITUTIONAL AND STATUTORY PROVISIONS CONCERNING VOCATIONAL EDUCATION, (2) THE COUNCIL'S POSITION ON CAREER EDUCATION, (3) EVALUATIVE ASSESSMENTS OF PROGRAMS IN REGARD TO THEIR GOALS, EFFECTIVENESS, AND APPROPRIATENESS TO THE POPULATION FOR WHICH THEY WERE DESIGNED, (4) A SUMMARY OF COUNCIL ACTIVITIES DURING THE YEAR, AND (5) RECOMMENDATIONS FOR THE COMING YEAR. STATISTICAL CHARTS AND MAPS DEPICTING FIGURES AND POTENTIAL AND EXISTING PROGRAM SITES ARE APPENDED. (SN)

THIRD ANNUAL REPORT

VIRGINIA STATE ADVISORY COUNCIL ON VOCATIONAL EDUCATION

NOVEMBER 1972

VT019850

2468

Virginia State Advisory Council on Vocational Education

217–C DRAPER ROAD N.W. P.O. BOX "U" BLACKSBURG, VIRGINIA 24060

MRS. SHIRLEY B. WILSON CHAIRMAN
NORFOLK, VIRGINIA PHONE 703-441-2957

RUFUS W. BEAMER EXECUTIVE DIRECTOR • BLACKSBURG, VIRGINIA
PHONE 703-951-6945

November 15, 1972

Mr. Preston C. Caruthers, President
State Board of Education
Richmond, Virginia 23216

Dear Mr. Caruthers:

The Third Annual Report on Vocational Education in Virginia is submitted to the State Board of Education for its review and action. The Advisory Council welcomes your comments.

The Council has assessed the scope and availability of vocational education programs throughout the Commonwealth. The recommendations are the result of a careful study of the existing structure and focus of Vocational Education in Virginia. We believe the implementation of these recommendations will be beneficial and invite the State Board to utilize these findings in any of your decisions affecting the development of occupational education.

With the appointment of Dr. Rufus W. Beamer as executive director, the Council has developed an ambitious program of action for the coming year. Several indepth studies will be made of particular areas of concern.

In accordance with Public Law 90-576, the report is to be forwarded with any additional comments by the Board to the U. S. Commissioner of Education and the National Advisory Council on Vocational Education.

Sincerely yours,

Shirley B. Wilson

Mrs. Shirley B. Wilson, Chairman

Enclosure

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

THIRD ANNUAL REPORT
ON
EVALUATION OF VOCATIONAL EDUCATION IN VIRGINIA

ACADEMIC YEAR 1971-72

Submitted to
The Commissioner of Education
United States Office of Education
and
The National Advisory Council on Vocational Education
through
The Virginia State Board of Education

The Virginia Advisory Council on Vocational Education
Richmond, Virginia
October, 1972.

2470

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FOREWORD

This Third Report on Career/Vocational Education in Virginia for the "year under review" (FY 1972) has been prepared in consideration of the suggested goals for State Council Evaluation issued by the Division of Vocational and Technical Education, U. S. Office of Education to serve as guidelines for the preparation of State reports.

An attempt has been made to make the Report as informative as possible for the general public regarding the Congressional intent in authorizing and funding State councils by supplying some of the basic legislative background for State councils. The introductory portions of the Report also indicate the membership of the Virginia Council and its functional committee structure.

The main body of the Report is concerned with the three focal points suggested in the USOE Guidelines as follows:

"Goal I: Evaluation should focus on the State's goals and priorities as set forth in the State Plan."

"Goal II: Evaluation should focus upon the effectiveness with which people and their needs are served."

"Goal III: Evaluation should focus on the extent to which Council recommendations (in prior report) have received due consideration."

The charts, maps, tabulations, and graphs shown in the APPENDIX are intended to further illuminate the relevant discussions contained in the delineation of Goals I, II and III.

The Council welcomes comments and suggestions that may be constructive in broader understandings of the progress, the needs, and the programs of Career/Vocational education in Virginia.

The Vocational Education Amendments of 1968 (P.L. 90-576) authorize and require the establishment of a State Advisory Council on Vocational Education appointed by the Governor, or under given circumstances by the State Board of Education, a State Advisory Council of not less than twelve members. The membership qualifications in the P. L. 90-576 and the Regulations make the following stipulations:

MEMBERSHIP

§102.22

The membership of the State advisory council shall exclude members of the State board, the State director of vocational education, and State board staff, and shall include:

(i) (A) At least one person familiar with the vocational needs and problems of management and labor in the State and (B) at least one person representing State industrial and economic development agencies;

(ii) At least one person representative of community and junior colleges and other institutions of higher education, area vocational schools, technical institutes, and postsecondary or adult education agencies or institutions, which may provide programs of vocational and technical education and training;

(iii) (A) At least one person familiar with the administration of State and local vocational education programs, and (B) at least one person having special knowledge, experience, or qualifications with respect to vocational education and who is not involved in the administration of State or local vocational education programs;

(iv) At least one person familiar with programs of technical and vocational education, including programs in comprehensive secondary schools;

(v) (A) At least one person representative of local educational agencies, and (B) at least one person representative of school boards;

(vi) At least one person representative of manpower and vocational education agencies in the State and the Comprehensive Area Manpower Planning System of the State;

(vii) At least one person representing school systems with large concentrations of academically, socially, economically, and culturally disadvantaged students;

(viii) At least one person with special knowledge, experience, or qualifications, with respect to the special educational needs of physically or mentally handicapped persons; and

(ix) Persons representative of the general public, of whom at least one shall be representative of and knowledgeable about the poor and disadvantaged, who are not qualified for membership under any of the preceding categories.

MEMBERSHIP ROSTER

STATE ADVISORY COUNCIL ON VOCATIONAL EDUCATION

Category One-Year Term beginning July 1, 1972

i Mr. Edmond Boggs, Commissioner, State Department of Labor and Industry, Ninth Street Office Building, Richmond, Virginia. 23216. Telephone (703) 770-2376; Home 288-3365.

ii Dr. Dana B. Hamel, Chancellor, State Department of Community Colleges, 911 East Broad Street, Tenth Floor, Richmond, Virginia. 23219. Telephone (703) 770-2231; Home 282-6345.

vi Mr. William L. Heartwell, Jr., Commissioner, Virginia Employment Commission, 703 East Main Street, Richmond, Virginia. 23219. Telephone (703) 770-3001; Home 484-2698 (Lawrenceville, Virginia).

vii Mr. William D. Richmond (Retired), Superintendent, Wise County Schools, Box 266, St. Paul, Virginia. 24283. Telephone (703) 328-2786.

ix Hon. O. Beverley Roller, Teacher of Agriculture and Member of the House of Delegates, Weyrs Cave, Virginia. 24480. Telephone (703) 886-4867; Home 234-5301.

v Dr. Robert J. Young (Retired), Past President, Virginia School Boards Association, P. O. Box 1021, Radford, Virginia. 24142. Telephone (703) 639-2906.

Category Two-Year Term beginning July 1, 1972

ii Mr. John V. Ankeney, Director, School of Engineering Technology, Virginia Commonwealth University, Richmond, Virginia. 23220. Telephone (703) 770-6671; Home 262-3151.

ix Dr. William T. Reed (Retired), Teacher-Education, Industrial Education, Virginia State College, 20509 Southlawn Avenue, Petersburg, Virginia. 23803. Telephone (703) 526-9487. (Home address and telephone number used).

i Mr. Samuel H. Shrum, President and General Manager, Nielsen Construction Company, Harrisonburg, Virginia. 22801. Telephone (703) 434-7376; Home 434-6144.

iv Mr. Walter M. Stata, Director, Scott County Vocational Center, P. O. Box 698, Gate City, Virginia. 24251. Telephone (703) 386-6515; Home 628-9183.

iii Mrs. Shirley B. Wilson (Mrs. George W.) Supervisor of Business Education, Norfolk City Public Schools, 800 East City Hall Avenue, Norfolk, Virginia. 23510. Telephone (703) 441-2957. (For unexpired term of Mr. L. A. Hill).

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Category Three-Year Term beginning July 1, 1972

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THE COUNCIL IS STRUCTURED TO OPERATE ON THE BASIS OF FUNCTIONAL COMMITTEES

Executive Committee
- Mrs. Shirley B. Wilson, Chairman
- O. Beverley Roller, Vice Chairman
- Mrs. Mary Powell Rosenstock, Chairman, State Plan
- William L. Heartwell, Jr., Chairman, Research & Evaluation
- Samuel H. Shrum, Chairman, Legislation
- Dr. Dana B. Hamel, Chairman, Personnel and Office Administration
- Charles A. Wornom, Chairman, Programs, Planning and Projects
- Dr. Rufus Beamer, Executive Director and Treasurer

Committee on Legislation and Funding
- Samuel H. Shrum, Chairman
- O. Beverley Roller
- Mrs. John J. Johnson

Committee on Personnel and Office Administration
- Dr. Dana B. Hamel, Chairman
- Dr. Edward Cooke
- Dr. William T. Reed

Committee on The State Plan
- Mrs. Mary P. Rosenstock, Chairman
- J. K. Samples
- Edmond Boggs
- Gilbert A. Meland

Committee on Programs, Planning and Projects
- Charles A. Wornom, Chairman
- John V. Ankenny
- Dr. James A. Bowser

Committee on Research & Evaluation
- William L. Heartwell, Jr., Chairman
- Dr. Robert J. Young
- William D. Richmond
- Walter M. Stata

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CONSTITUTIONAL AND STATUTORY PROVISIONS FOR OCCUPATIONAL EDUCATION IN VIRGINIA

Of the many noteworthy projects of vocational and career education underway in Virginia, at least four seem to merit current consideration. (pp. 20-21).

Perhaps of greatest significance in terms of statewide impact on public education at all levels and of all kinds are the provisions made in the ratification of the Revised Constitution of Virginia in 1971.

A. CONSTITUTIONAL MANDATES

Article VIII, Section 2, Revised Constitution of Virginia adopted in November, 1971, mandates standards of performance and quality of education in the public schools of the Commonwealth.

Standards of Quality; State and local support of public schools.

"Standards of quality for the several school divisions shall be determined and prescribed from time to time by the Board of Education, subject to revision only by the General Assembly."

B. LEGISLATIVE ENACTMENTS

The General Assembly of Virginia in its 1972 winter session enacted legislation recommended by the State Board of Education with the following provisions:

Program Standards

Paragraph 5, Vocational Education. "Each school division shall provide, either within the division or on a regional basis, training for employment by students planning to enter the world of work, or it shall develop a plan acceptable to the Board of Education by June thirty, nineteen hundred seventy-three to provide such training."

Paragraph 6, Continuing Education. "Each school division that does not provide a program of adult education either within the division or on a regional basis shall develop a plan acceptable to the Board of Education by June thirty, nineteen hundred seventy-four to provide such a program."

Planning and Management Standards

Paragraph 4. "The superintendent shall involve the community and his staff in the preparation of a five-year plan, which shall be updated annually. Such a plan shall be based on a study of the extent which pupils are achieving the eight broad objectives formulated by the Board of Education and shall be designed to raise the level of pupil performance. This plan shall be reviewed and approved by the State Board and submitted to the State Superintendent of Public Instruction for approval by the Board of Education."

Paragraph 5. "The superintendent shall prepare and present to the School Board an annual plan to achieve specific objectives of the approved five-year plan as part of the annual operating and capital outlay budgets."

Paragraph 6. "The superintendent shall, as directed by the Board of Education, make annual follow-up studies of former students (dropout and graduates) who enter employment or who continue their education beyond high school as a means of assessing the effectiveness of the school program."

Paragraph 7. "The superintendent and his staff shall provide an effective program of instructional supervision and assistance to principals and teachers that is consistent with the objectives of the school division."

"The standards of quality prescribed above, as herein revised, and made effective, shall alone be the only standards of quality required by Article VIII, Section 2, of the Constitution of Virginia."

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State Performance Objectives

Paragraph 1. "A number of pupils equal to at least seventy percent of the pupils who entered the first grade twelve years earlier should be graduated from high school."

Paragraph 2. "The percentage of the school population overage in the elementary grades should not exceed twenty percent of the enrollment in grades K-7."

Paragraph 7. "At least one hundred thirty-five thousand adults should be enrolled in continuing education programs."

Paragraph 8. "At least seventy percent of the high school graduates should continue their (occupational) education in programs provided by colleges and by schools such as business, nursing, data processing, and trade and technical."

Paragraph 9. "At least ninety percent of the teachers should be assigned to teach only those subjects for which they have certificate endorsements."

Paragraph 10. "At least twenty-three percent of the teachers should hold advanced degrees."

In addition to the above statutory requirements, House Bill 845 spoke definitely concerning the obligation of local school divisions and the State Department of Education on the subject of Planning and Management Objectives.

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COUNCIL'S POSITION ON CAREER EDUCATION

In the quest for a meaningful education, nothing is more important for every youth than to be provided with the kind of experiences which will enhance his capability to make rational career decisions, and with the opportunity to prepare for a selected career and to make progress on it.

Central to the belief that career decisions must be made through intelligent choice rather than haphazard chance is the proposition that public education, from kindergarten through college, must take steps to design and implement programs that will enhance intelligent career selections.

It is the belief of the Virginia State Advisory Council on Vocational Education that Career Education, constituting a central theme in the total spectrum of public education, should be assigned high priority throughout the State and Nation. It should become a major objective of public education; with its achievement measured by employability in occupations, both gainful and useful, that are a reasonable match of both the talents and the motivations of every citizen.

The Virginia State Advisory Council on Vocational Education pledges strong support for Career Education as an emerging, essential concept that will provide a meaningful system of learning experiences which will assist all youth to acquire useful information about the total work force, the intelligent determinations of personal capabilities and aspirations, the requisites for all occupations, and the opportunities to prepare for gainful and useful employment.

It is this latter component of Career Education—that of opportunity to prepare for employment—which can be well served by strong programs of vocational and technical education. To deny this climaxing opportunity—whether such preparation be performed at the secondary level, post-secondary level, in adult classes, or in business and industrial enterprises—is to nullify the purpose of Career Education and make futile a realistic goal of education.

In this context, the Council believes, further, that the following characteristics are inherent and essential elements of Career Education:

1. Career Education is not synonymous with Vocational Education, but Vocational Education is a major component of Career Education.
2. Career Education is an integral part of the overall structure of the public schools; it involves an expressed need for utilizing the common and unique contributions of all educators, and the resources of home, school and community.
3. Career Education is a comprehensive educational program focused on careers, which begins in the kindergarten and continues through the adult years. In elementary school, students are informed about the wide range of jobs in our society and the roles and requirements involved. In junior high school, students may explore specific clusters of occupations through hands-on experiences and field observations, as well as through classroom instruction. In senior high school, students prepare for job entry or for further education. In adult life, citizens have opportunity for continuing occupational growth and achievement. Placement in a job or in further education are options open to all students.
4. Career Education not only provides job information and skill development, but also helps students develop wholesome attitudes about the personal, psychological, social and economic significance of work. It helps the student to develop an appropriate work ethic or life ethic.
5. Career Education provides knowledge and experiences that enhance job adaptability in a time of rapid change due to technological advances and fluctuating economic trends.

The Council further believes that in order for this concept to be realized, education planners must work to achieve the following:

1. The expansion and strengthening of Vocational Education as a significant and identifiable component of Career Education.

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2. The development of a curriculum, beginning at the kindergarten level, that provides to the student an increasing value and appreciation of the dignity of work, the knowledge of the world of work, and the need for and satisfaction of acquiring a saleable skill.
3. Necessary changes in teacher education which will provide competent Career Educators.
4. Additional funding for all components of Career Education.
5. The redirection of present general education funds into the implementation of Career Education programs.
6. The establishment of effective coordination so that articulation is provided among all levels of education.
7. The acceptance of the characteristics of Career Education, as stated by the public and professional educators as desirable life goals for all persons.

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GUIDELINE GOAL I

Focus on State Plan Objectives and Priorities

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Focus on State Plan Objectives and Priorities

The primary concern of this report, in addition to reviewing the State Plan for FY 1972, is to identify the goals and priorities for career/vocational preparation as gleaned from the State Plan for Vocational Education for FY 1973. For purpose of ease of understanding, the term "Goal" is used to express an objective or eventual accomplishment of an objective which is measurable as to time of achivement; it is behavioral or activity oriented; it is assigned to a designated and responsible and accountable agent; and it has a defined time span.

The term "Priority" is here used to express the order of importance of the objective action, presumably requiring an ordered allocation of resources.

Except for references to enrollment, labor demand and supply, and projected additions to buildings and equipment, there are few categorically stated goals in the State Plan.

There are numerous references to educational problems and procedures of vital importance to the furtherance of educational progress that are projected by implication. Both of these kinds of goals and their priorities will be considered in this phase of the Report.

The Council believes that all of the following named goals are realistic, and entitled to unstinted support of the Council and the public at large.

STATEMENT OF GOALS AND PRIORITIES AS EXPRESSED OR IMPLIED IN THE STATE PLAN FOR FY 1973

The Virginia State Plan for FY 1973 states or strongly implies the following goals and priorities for planning and the administration of the programs of vocational education in the Commonwealth for the year ahead.

1. GOAL/PRIORITY—EDUCATIONAL PERSONNEL PREPARATION AND DEVELOPMENT

   It is the responsibility of the State Board to provide adequate programs of teacher education for vocational education. This is accomplished through cooperative arrangements with the governing bodies of the teacher-education institutions and through programs organized and conducted by the State supervisory staffs.

   Accredited public and private institutions in the State may provide teacher training programs in one or more occupational areas at both pre-service and in-service levels.

   Persons preparing to serve as vocational personnel in private schools may participate in pre-service and in-service training programs under Part F of the Educational Professional Development Act and may receive stipends if paid to other trainees. (1.41, FY 1973)

   COMMENT: This continues to be one of the crucial problems across the State and relevant to all the disciplines in vocational/technical educational. There is great need for exploring all avenues in enlistment, training and placement of instructional, supervisory and administrative personnel at all levels of involvement. The problem involves classroom instructor, principals, and superintendents of school systems, all of whom need basic, if not specific, orientation to career/vocational education.

2. GOAL/PRIORITY—Utilization of Business and Industry to Meet Educational Personnel Needs
   Local education agencies may utilize qualified people from business and industry and commercial enterprises as a source of teachers to help fill personnel needs of vocational education. Utilization of such personnel is subject to the regulations of the State Board. (1.41-5, FY 1973)

   COMMENT: This is a corollary to Goal #1 but deserves special consideration. The State Plan for FY 1972 also made this point. It is therefore a persistent problem in providing occupationally competent instructional staff. There is, however, little evidence that much is being realized except in adult evening programs and at the Vocational-Technical Centers. The proposal is both educationally sound and a desirable goal.

3. GOAL/PRIORITY—PROGRAM EVALUATION

Periodic evaluations of State and local vocational education programs will be made with reference to the current and projected manpower needs and job opportunities, and to the relative vocational education needs for all groups in all communities of the Commonwealth. Continuous evaluation of every program is provided in order to measure the effectiveness of that program in meeting its objectives. (1.5 FY 1973)

The criteria for the evaluation of vocational programs is that used by the State Department of Education for the evaluation of individual schools as well as the criteria established for the evaluation of a local educational agency. (1.51, FY 1973)

COMMENT: The Council most heartily concurs in the inclusion of Program Evaluation at the local and State levels as an imperative need on a continuing basis. What other alternatives exists for establishing accountability and for providing development guidelines?

Content and method in occupational instruction to have value must perforce be highly relevant to the eventual job performance. Job performance audits on a continual basis followed by revision of curriculum content and method of instruction would seem to be an imperative.

Student follow-up and functioning local program or craft advisory councils or committees have been valuable contributors to the achievement of this objective.

4. GOAL/PRIORITY—STATE REPORTS

Each local school division shall keep records and submit all reports necessary to enable the State Board to determine that the program of vocational education is being operated in accordance with the provision of the State Plan. (1.6, FY 1973)

COMMENT: Educational progress quite largely stems from planning by using carefully selected and validated data as building blocks. The validity and meaning of State assembled reports on enrollment, guidance services, extent and severity of disadvantagd and handicapped, etc. being dependent upon accuracy and completeness of local-to-state reports requires processes utilizing electronic computer systems.

5. GOAL/PRIORITY—COOPERATIVE ARRANGEMENTS WITH STATE EMPLOYMENT COMMISSION

A cooperative arrangement is entered into between the State Board of Education and the Virginia Employment Commission (VEC) in order to further establish the means for practical and effective working relationships between the agencies in providing realistic vocational education programs in the light of employment opportunities.

The Virginia Employment Commission will arrange for referral of applicants from their files to public vocational education programs for training which is consistent with the interests, aptitudes, and needs of the applicants.

The VEC will also arrange for counseling, testing and placement services for dropouts, those who have completed a training program and others needing training or retraining in order to assist them in obtaining suitable employment.

The State Board of Education, through the department staff, will encourage local school boards to provide local employment offices of the VEC such information as would normally be available regarding established vocational programs for use in referring individuals who need training to local vocational education programs. (1.71, FY 1973)

COMMENT: Of the several cooperative working relations with other State agencies, none has greater potential for serving the needs of employer/employee than the team approach with the Virginia Employment Commission (VEC). The State Advisory Council wholly supports this arrangement. Not nearly enough has been done between these two State agencies to support and coordinate the interests and procedures in testing, placement, and follow-up.

By more fully using the significant research and supportive services of each component for preparing and utilizing the labor force, everyone will gain.

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6. GOAL/PRIORITY—VOCATIONAL EDUCATION RESEARCH AND PERSONNEL TRAINING

Funds allotted to Virginia for the purpose of Part C of the Act are available to the State Board pursuant to Section 131 of the Act may be used for the establishment and operation of the State Research Component for Vocational Education for:

(a) research and training programs;

(b) experimental, developmental, or pilot programs;

(c) dissemination of information derived from the foregoing programs or from research and demonstrations in the field of vocational education. (5.0, FY 1973)

The staff shall consist of a coordinator of research, computer programmer, system analyst, a secretary, and other personnel assigned on an approved project basis.
The organization of such a research component is a part of the Division of Vocational Education and the relationship with other agencies are shown in the following Organizational Chart of Component for Research in Vocational Education. (5.1, FY 1973)

COMMENT: It is gratifying to know that the facilities for gathering and processing of large quantities of raw data by the Vocational Education Evaluation Project and the offices of Vocational Education Research and Statistical Information Service under the direction of a highly competent person began its operation in April, 1972. This vocational education supportive service will work cooperatively with the State Division of Educational Research and Statistics toward these objectives:

(a) development of a vocational education reporting system for enrollments and follow-up;

(b) supervising research projects to be funded under Part C of the 1968 Amendments; and

(c) development of two 18-month projects for career education models.

7. GOAL/PRIORITY—SERVING THE DISADVANTAGED

The identification and counselling of disadvantaged persons will be carried on through local educational programs by administrative, guidance, and vocational personnel.

These persons are identified as those having academic, socio-economic, cultural, or other handicaps that prevent them from succeeding in regular vocational education programs designed for persons without such handicaps. This includes those persons whose needs result from poverty, neglect, delinquency, or cultural or linguistic isolation from the community at large, but not mentally or physically handicapped persons. (3.12, FY 1973)

COMMENT: The disadvantaged student constitutes a relatively new identification as a special needs grouping—being statistically identified in State reporting first in the 1969-1970 releases.

During the year under review and the two previous years, 1969-70 and 1970-71, the identification of the disadvantaged has grown statewide from 11,556 to 44,733 and to 45,909 or a growth in identification by 297.27%.

The Council is especially concerned that identification of all such persons be achieved and that there be sufficient Federal and State funding to fully meet the Commonwealth's obligation and commitment.

8. GOAL/PRIORITY—SERVING THE HANDICAPPED

Cooperative agreement between State Board of Education and State Board for Vocational Rehabilitation will be established in order to assist in planning, financing, and supervising vocational training aspects of programs for the handicapped. (1.72, FY 1973)

A greater emphasis has been placed on programs and cooperative arrangements with other agencies so as to serve the handicapped in vocational education.

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COMMENT: It is noteworthy that because of improved diagnoses and a greater concern, the numbers of handicapped served increased from 3,400 in FY 1971 to 5,658 in FY 1972, an increase of 2,258 persons or a percentage increase of 66.4%. This is a commendable record of achievement in the two years for which special set-aside funds have been designated for service to this segment of the school enrollment.

9. GOAL/PRIORITY—PRIORITY ALLOCATION OF FUNDS TO CERTAIN AREAS

Priority will be given to areas of the State having high concentrations of youth unemployment or school dropouts for the establishment of residential vocational education schools. (7.13, FY 1973) (Appendix A)

COMMENT: It is encouraging to observe that special emphasis on vocational education has been indicated by the State Department of Education for areas identified as Economically Depressed, with abnormal dropout rates and high unmployment for both adult and youth.

Map C included in the State Plan for FY 1973 shows the geographical location of the 15 school divisions (4 counties and 11 cities) having excessive school dropout and high unemployment rates. (Appendix A)

10. GOAL/PRIORITY—COOPERATIVE VOCATIONAL EDUCATION PROGRAMS

Funds allotted to Virginia for the purpose of Part G of the Act and available to the State Board pursuant to Section 173 (a) of the Act may be used to establish cooperative vocational education programs and to provide ancillary services and activities which are necessary to assure quality in such programs. (7.13, FY 1973)

COMMENT: Cooperative Vocational Education in the regular program, Part B of the Act is a highly useful and widely accepted practice across the State and had been for more than twenty-five years prior to the passage of the Vocational Educational Act of 1963 with the 1968 Amendments. In the case of Business and Office Education, the cooperative program begun in 1948 with State funding only had become rather substantial as to enrollment and job placement by 1963.

Cooperative education under the provisions of Part G of the Act has developed as a supplement of the program under Part B, enrolling slightly over 1,000 students in 1971-1972.

The cooperative program is influenced significantly by the development of strong youth leadership organizations in each of the occupationally oriented services as evidenced by the accompanying tabulations. While the memberships of the two groups are not totally identical, there is considerable duplication. (Appendix J)

FIVE YOUTH LEADERSHIP ORGANIZATIONS

GROUP	NO. CHAPTERS	SPONSORING SERVICE	MEMBERSHIP
DECA	190	Distributive	10,383
FBLA	163	Business & Office	5,630
FFA	201	Agriculture	14,339
FHA	315	Home Economics	13,329
VICA	106	Trade & Industrial	7,100
	975		50,781

GUIDELINE GOAL II

Focus on Serving the Needs of People

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1. ADULT AND CONTINUING EDUCATION

All of the service areas in the Division of Vocational Education made noteworthy progress in providing programs and ancillary services to the ever-increasing members of persons requiring additional skills for new jobs and for upgrading of job skills for new jobs and for upgrading of job skills for promotional opportunities.

During the 1971-72 academic year more than 18,800 persons were served through post-secondary vocational programs, in the two-year community colleges, and other institutions offering courses at this level. The greatest growth, however, was reflected in the post-secondary programs in the community colleges in the highly skilled areas. (Appendix B)

Some of the specific expansions were realized in the field of Vocational Agriculture where 77 students explored the opportunities in the agriculture supply business and in the field of forestry. Both of these fields represent the general trend of preparing students for off-farm occupations.

The expansion of adult education enrollment of young farmers moved up from 4,614 in 1970-71 to 4,898 in 1971-72, a percentage gain of 6.15 points. Also in Vocational Agriculture there were 10,-114 enrolled in 614 evening school classes in 64 high schools and one college located in 25 school divisions, a decrease of 5.8% from the prior year.

In Business and Office education, for example, two four-year colleges and one post-secondary school employing 32 teachers instructed 310 students; in Data Processing, 55 students; Secretarial, 89 students; Accounting, 29 students; and, Clerical-Typists, 137 students. Thirteen community colleges provided programs in Business and Office education and in Distributive Education where there were 79 junior executive trainees enrolled.

Enrollments in Trade and Industrial education in post-secondary programs served 4,651 students in 1971-72 contrasted with 3,074 the previous year, a net gain of 1,577 or a percentage gain of 66.09.

In Distributive Education community adult programs showed a phenomenal increase from 29,279 in 1971 to 38,493 in the secondary school.

2. EXPANDED SERVICE TO THE HANDICAPPED

During FY 1972, there was greater emphasis on programs and cooperative arrangements with other agencies to serve more effectively the handicapped in vocational education. Enrollment of the handicapped in Trade and Industry alone reached 5,658 persons up from 3,400 in the previous year or a gain of 2,258 persons or an increase of 66.41%.

Approximately 85 handicapped secondary students were in Distributive Education, and Home Economics education identified 1,869 handicapped students with 806 located in SMSA areas and 353 in Central Cities areas. In all services, 3,398 handicaps were served with an expenditure of $852,187, using $464,840 Federal and $387,346 State and local funds.

3. SPECIAL EMPHASIS ON NEEDS OF ECONOMICALLY DEPRESSED AREAS

Forty-four school divisions out of the total 140 administrative units were classified by the State Department of Education as being acutely distressed economically. About one-half of these localities also showed high unemployment as a probable causal factor. (Appendix C)

Of the seven school construction projects under way during FY 1972, six of them are located in the far Southwestern part of the State principally in localities that have been identified as severely depressed areas and areas of highest unemployment, thus indicating a consideration for more adequate occupationally prepared graduates and leavers. (Appendix D)

4. CONSTRUCTION OF VOCATIONAL PROJECTS

— Secondary Schools
— Post-Secondary Programs

Notice has been taken in reference to Appendix D of the seven current construction projects for expanding the vocational program at the secondary school level.

We have also observed that the greatest growth in vocational enrollments is occurring at the post-secondary level—in the community colleges. This phenomenal growth is dramatized on the line graph, Appendix B.

It should follow that a high level of construction activity and program development should be taking shape in the post-secondary level of vocational education. This situation is confirmed by the fact that of the 23 community colleges, four are in the planning or just completed stages and the remaining 19 are all in the process of building additions. (Appendix E)

The following table which is shown in State Plan for FY 1973 reveals substantial planning for the next 5 years. With respect to the projected need for both secondary and post-secondary, planning on this scale appears entirely justified, since the expressed "State Performance Objectives" referred in page 2 of this report suggests that:

Paragraph 1. "A number of pupils equal to at least seventy percent of the pupils who entered the first grade twelve years earlier should be graduated from high school." And

Paragraph 8. "At least seventy percent of the high school graduates should continue their (occupational) education in programs provided by colleges and schools such as business, nursing, data processing, and trade and technical."

If these objectives are realized, there will be an imperative need to expand the plant and instructional facilities in gigantic proportions.

GUIDELINE GOAL III

Extent of Consideration for FY 1972 Recommendations

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EXTENT OF STATE DEPARTMENT ACKNOWLEDGMENT AND IMPLEMENTATION OF RECOMMENDATIONS IN SECOND ANNUAL REPORT

The State Advisory Council in its Second Annual Report, September, 1971, offered the following eighteen statements for the consideration by the State Department of Education for the ensuing year and received the accompanying written acknowledgments:

RECOMMENDATIONS FOR FY 1972

1. CAREER ORIENTATION IN THE ELEMENTARY GRADES

The Council recommends that there be instituted in each elementary school, grades K-6, a program of career orientation sufficiently broad to offer an exploration in the principal occupational fields, and emphasis on proper attitudes toward the world of work. This objective can be achieved only by occupationally oriented teachers and counselors and by budgetary provisions sufficient for implementation.

State Department Response

Two career education experimental model programs will be in operation in 1972-73 with major components at the elementary level giving emphasis to career awareness. These models allowing experimentation with this concept will make it possible for other school divisions to see examples and determine how best career education can be achieved in their schools. The Standards of Quality for Public Schools in Virginia speaks to career education and through the five-year improvement plans to be developed each division will have the opportunity to establish long range plans for their programs.

2. OCCUPATIONAL EDUCATION FOR ALL

It is imperative that the State Department of Education and local school systems provide for all persons a program of vocational and technical education so that no one will leave school without a saleable skill or adequate preparation for continuing education.

State Department Response

One of our purposes of education as stated in the Standards of Quality for Public Schools in Virginia is "To acquire skills and knowledge needed for education beyond high school or for employment." These standards also specify that a school division must provide training in skills needed for employment for all students who plan to enter the world of work or have a plan by June 30, 1973 to provide such training.

3. STATE PLAN GOALS

The State Plan should be formulated in such a manner that major goals and priorities are expressly stated either in an inter-related fashion or in a separate document.

State Department Response

The State Plan has been developed each year according to the guidelines from the U. S. Office of Education. There have been some changes in the guidelines this year that present goals and objectives in a manner that will be easier to understand. Additional information has also been used in an introduction to Part II which will be helpful to the State Plan reader.

4. PUBLIC INFORMATION FACILITY FOR VOCATIONAL EDUCATION

The State Advisory Council further recommends that there be attached to the Office of the Director of Public Information a person experienced in Vocational Education whose responsibilities will be to gather and disseminate news and views pertaining to the end that greater visability and the resulting enhancement of the image of vocational education will be achieved.

State Department Response

The Division of Vocational Education has the opportunity to request additional state staff members and to include them as a part of the biennium budget. The priority needs for new staff

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would not allow a position of this type to be requested as one of the allotted position to vocational education this year. The services of the Office of Director of Public Information are available to vocational division and are utilized extensively. Increased news coverage is desirable and, through the existing system, efforts will be made to provide greater visibility to vocational education.

5. PUBLIC INFORMATION ON VOCATIONAL EDUCATION

As a means for improving the general acceptance of vocational education, it is recommended that Educational Television facilities across the State be utilized to the practical limits of their potentialities for presenting information relative to the opportunities for occupational training and employment.

State Department Response

Vocational education has utilized ETV for many program activities such as adult programs in agriculture, in-service training in data processing for business teachers, and vocational education week publicized with the showing of a film on vocational education statewide by all stations. Additional activities are being discussed and explored, and continued utilization of ETV will be made by the vocational education division.

6. LOCAL ADVISORY COUNCILS

In consideration of the potentially beneficial input by local advisory committees and councils, the State Advisory Council recommends that the Director of the Division of Vocational Education and his staff consider the advisability of continuing to encourage the establishment, evaluation, and wise use of citizen advisory committees on one or more of the following levels:

(a) Total Vocational Program on a School Division-wide basis;

(b) For each special discipline on a Division-wide basis;

(c) Special Craft Advisory Committees on a Division-wide basis;

(d) Either or both (b) and (c) on a single school basis.

State Department Response

The vocational division has always encouraged the use of local and state advisory committees and will continue to do so.

7. YOUTH LEADERSHIP ORGANIZATION

The Council further recommends that the staff of the Vocational Division in the State Department of Education continue to encourage wide participation in its professional members, related teacher educators, and supervisory personnel in sponsoring youth leadership organizations as a regular part of the school program.

State Department Response

The vocational education youth organizations are an integral part of the vocational programs providing opportunities for leadership and citizenship training. They will continue to receive major emphasis in the total program of vocational education. In addition the Young Homemaker and Young Farmer organizations for young adults will continue to receive emphasis.

8. JOB PLACEMENT AND FOLLOW-UP

On the conviction that initial job placement and follow-up of vocational graduates, and school leavers having employment potential, are integral parts of occupational preparations, the State Advisory Council strongly recommends that serious consideration be given for employment of a competent person whose primary responsibility is in placement and follow-up, and that he be employed on a 12-month tenure for providing these services for all vocational education programs.

State Department Response

The two career education models mentioned under Recommendation 1 include components for establishing a placement service with a full-time person to assist students leaving school to secure initial job placement. The Standards of Quality for Public Schools in Virginia provide for an annual follow-up of former students (dropouts and graduates) as a means of assessing the effectiveness of the school program. Also the local advisory committees and guidance counselors can play an important role in both job placement and follow-up. The vocational division is presently planning for a new follow-up procedure to be used for those completing vocational programs. This will include a questionnaire being sent to the individual student for completion and is tentatively scheduled for use in the fall of 1973.

9. POST-SECONDARY OPPORTUNITIES—COMMUNITY COLLEGES

Because of the rapid development of the technologies and resultant changing pattern of employment opportunities in the Commonwealth, the subsequent increase in the demand for qualified workers in the new industrial and occupational categories, it is imperative that vocational and career educational programs be expanded and modernized to meet today's needs.

It is, therefore, recommended that consideration be given to new and emerging para-professional occupations, particularly in the areas of:

Social Service Occupations	Environmental Technology
Recreation and Parks Specialties	Public Safety
Public Service Administration	Fire Science
Allied Health Technologies	Library and Teacher Aids

There is evidence that instructional planning and programming in these areas are emerging at the post-secondary school level, especially in the Community College Program. Steps should be taken to insure that curriculum in these areas is relevant, based on occupational analysis, behavioral objectives, the job market, and follow-up procedures.

State Department Response

There is provision made in Part II of the Plan which indicates the expanding and new programs in many of the above mentioned occupational fields to be in operation in 1972-73.

10. ON SERVING THE HANDICAPPED

It is alleged that unsatisfactory results have been accomplished with the funds designated for vocational education for the handicapped in the public schools. There is concern that state appropriations are insufficient for the matching of funds which localities are expected to provide. Greater state appropriations, it is believed, would eliminate the practice of over-using vocational rehabilitation funds and services for a program that is essentially the responsibility of the public schools.

The Council recommends that this practice be given serious study.

State Department Response

There has not been a full utilization of the federal funds designated for handicapped. Part of this has been brought about by the late funding in the first year of the Vocational Education Amendments of 1968. Subsequently, with the carry over provision of the Tydings Amendment the allocation each year has been nearly doubled. These funds need to be matched on a fifty-fifty basis and full utilization has not been accomplished. Efforts are being made to alleviate this. One approach is the state funds requested by special education in the next biennium to be used to match some of the federal funds so pilot programs could be established with 100% reimbursement. There are also programs in the public school where joint efforts with vocational rehabilitation are being explored. Continued participation is expected in the state institutions and through other state agencies where program assistance has been provided for many years.

11. SPECIAL EDUCATION

Since Special Education presents a splendid opportunity for creating innovative and exemplary pilot programs, it is recommended, therefore, that consideration be given to the establishment of additional innovative and exemplary programs for the handicapped children, especially with work-study activities.

State Department Response

The pilot programs identified in Recommendation 10 will provide the opportunity to establish these kinds of programs.

12. ADDITIONAL FACILITIES

In consideration of the fact that the secondary school output of employable persons is somewhat less than 50% of the estimated annual labor demands, it is strongly recommended that the highest priority be given to additional funding required for the additional proposed facilities identified in Map G, Part II, Page 2, State Plan FY 1971. This involves the addition of 20 comprehensive high school vocational departments; 16 additional vocational education centers; and 4 additions to existing schools over a period of five years.

State Department Response

Efforts are being made to establish priority for additional funding to assist with the construction of the proposed vocational facilities of the local school divisions. Operational costs increase proportionally as new facilities are completed and sufficient additional funding has not been made available as rapidly as the need has developed.

13. MAINTENANCE OF FACILITIES

The Council recommends that adequate financial provision be made for the maintenance of existing physical properties for vocational education by establishing a policy for the allocation of replacement funds equal to the annual attrition resulting from depreciation and obsolescence estimated at 5% to 10%.

State Department Response

Adequate replacement of worn-out or obsolete equipment is extremely important if vocational programs are to stay up-to-date and provide laboratories for education that are equivalent to that in the business and industrial community. Again, sufficient additional funding has not been made available as rapidly as the need has developed. However, in alloting funds categorically for each fiscal year, the proportion of funds allotted for equipment is given a high priority.

14. PROFESSIONAL STAFFING

In response to the known shortages of professional staff members in the Division of Vocational Education, the Council recommends that the State Board of Education give serious attention to the urgency for employing such additional staff members as may be recommended by the Director of Vocational Education to Suggested Criterion: Uniform ratio of supervisors to programs and teachers involved in each of the principal services.

State Department Response

Increased staff positions in vocational education were presented as a part of the Department of Education budget requests for 1972-74. These were proportionate to those allotted other divisions in the Department of Education and represent those positions identified as priority needs.

15. FINANCING IMPERATIVES

This recommendation is basic to the premise that every child, youth, and adult has an inalienable right to avail himself of such opportunities as contemporary society can reasonably provide for the development of his innate capacities for self-realization.

Conversely, it is the responsibility of the Commonwealth to provide for ALL its people the maximum opportunity for self-fulfillment culturally, socially, and economically.

Progress in the achievement of this goal implies and requires a higher relative priority for financing vocational education to the end that every adult citizen become a self-sustaining member of society.

As a matter of long-range expediency as well as for inherent humane reasons, the Advisory Council recommends that the financing of vocational education be given a priority commensurate to the known needs of the individual and the employer. It is suggested that the generally established ratio of those students who do not complete the acadmic degree to those who do be considered.

State Department Response

Affirmative action by the State Board on the budget request for vocational education for the 1972-74 biennium shows their acknowledgement of the importance of the program and its expansion. Though some funds were cut from the budget before reaching the General Assembly, a substantial request for vocational education was included. Additional federal funds are also necessary to provide for a program of vocational education adequate to meet needs of all persons in Virginia. In addition to the budgetary action by the State Board, their approval of the Standards of Quality for Public Schools in Virginia (See Recommendation 1 and 2) shows the importance placed on vocational education and the persons it serves through secondary, post-secondary, and adult programs.

16. MORE ADEQUATE RESEARCH SERVICE

Further, it is recommended that the research facility for vocational education projected and described in FY 1972 State Plans (2.44—21: III-55) be activated as planned and that programming be initiated that will provide information on enrollments in all career orientation, counseling services, and occupational enrollments, completions, placements and follow-up services. These data should be available on prior year operations by August 1 subsequent to end of the school year.

State Department Response

Staffing of the research compenent for vocational education will be completed during the 1971-72 fiscal year. Plans are underway for this unit to put into operation a data system to provide information on enrollees in vocational education programs at the secondary level in 1972-73. Expansion of this data collection system at other levels is expected after the first phase is operational. Projections call for follow-up data to be collected by this unit also starting in 1973-74. Availability of this data may not correspond to the timing identified in the recommendation. Time frames are being established on the reporting schedule required to meet federal reporting deadlines.

17. ADULT AND CONTINUING EDUCATION

In addition to the regular secondary school program, the State Board of Education is responsible, through public schools, for developing and expanding programs in vocational education for persons who have completd or discontinued their formal public school education and have entered the labor market. Many of these persons need to up-grade their occupational knowledge, skills and performance. The courses provide a continuing, articulated, and sequential program from the high school adult level. They are generally taught and supervised by the persons who conduct comparable day programs in the high school.

During the school year 1969-70 the enrollment in adult vocational education in the public schools was 81,481. The enrollment in this program for 1970-71 (year under review) had grown to 93,815 or an increase of more than 15%. The courses included both short-term and long-term instruction at the mid-management and craftsmen level, and training for occupations at both the semi-skill and the skill levels.

It is strongly recommended that adequate provisions continue to be made for the improvement and extension of the adult education program with appropriate and accessible facilities and with an operating budget consonant with numbers served.

2193

State Department Response

The adult vocational education program will continue to receive a high priority as a program activity. Substantial increases in adults enrolled in vocational programs for supplementary and preparatory training is identified in Part II of the State Plan.

18. POST-SECONDARY PUBLIC SCHOOL PROGRAM

During the school year 1969-70 slightly more than 2,600 persons who had completed the high school program enrolled in preparatory job training courses in the public schools and colleges.

For the "year under review" these enrollments totaled more than 3,600. These persons pursued courses leading to employment in such occupational areas as merchandising, electronics, industrial technology, health services, hotel-motel management, and managment-level training in business and office occupations.

The Advisory Council further recommends that this program be continued and expanded to meet the growing manpower needs.

State Department Response

Continued emphasis will be placed on helping students to identify and prepare for career objectives throughout the K-12 program. Many of these can be served through secondary vocational education programs while others may call for further training at the post-secondary two-year level or in a four-year college program. Additionally many needs will continue to be served through adult programs of vocational education in the areas of preparatory and extension training.

NOTEWORTHY DEVELOPMENTS IN 1972

One of the urgent requirements cited in the Council's Recommendations one year ago dealt with the need for a census-type data system for planning and management in career/vocational education in Virginia. Happily, much has been achieved in this direction.

DEVELOPMENT OF RESEARCH COORDINATING UNIT

State Level. Under the aegis of the State Division of Vocational Education, Virginia Polytechnic Institute and State University at Blacksburg, we are in our second year development of a comprehensive research facility that will be tailored to serve the specific needs in Occupational Education, evaluation, and administrative reporting. A public release on this project states, "Because of these considerations this research project has been initiated to develop a state-wide evaluation system for vocational education in Virginia." All five vocational services—Agriculture, Business and Office, Distributive Education, Home Economics, and Trade and Industrial Education are in the project which is being funded on a 90 per cent reimbursement by the Division of Vocational Education from Part C Grant and 10 per cent by the University.

The Research project at the University will work closely with the Division of Educational Research and Statistics of the State Department of Education in Richmond providing information for reporting on (a) enrollments in vocatonal education; (b) program completions and placements; (c) number of teachers; (d) training of teachers and administrative personnel; and (e) cost performance audit,, and other relevant financial information.

Local Level. At the local level, one of the major outgrowths of this research will be a product especially useful to vocational teachers, designated BOOST (Behavioral Objectives Organized in a System for Teachers). The final system will comprise a "series" of instructional units completely prepared for use by teachers on request. Each will consist of:

a. An Outline of Content

b. Justification for the Unit

c. Recommended classs hours to be used

d. Statement of goals and accomplishment standards

It is anticipated that as many as 300 two- and four-week units will be available by February, 1973—60 to each of five service areas.

DUAL-PURPOSE EXPERIMENTAL PROJECT—LOUDOUN COUNTY, VIRGINIA

The purpose of this experimental project is directed towards the need for and feasibility of using a small general purpose computer for the improvement of vocational instruction and county school administration in a typical county in predominantly rural Virginia.

This is an ADP system concept, the cost of which can be funded by the resources of a typical county where annual family income is approximately $5,000.

The stated objectives of this project are:

1. Determine the feasibility of using a small general purpose computer—(must have COBOL and FORTRAN capability) in vocational education and administration.
2. Determine to what extent the County school system can:
   a. Make use of a small computer
   b. Economically justify it (i.e. cost/effectiveness)
3. Test and demonstrate the feasibility of the application of a small general purpose computer for:
   a. Hands-on training
   b. Other vocational education training
   c. Administration
4. This project proposes, upon succesful completion, to create a model derived from the analysis which will provide for:
   a. Data on vocational opportunities
   b. Direct assistance in vocational education curriculum
   c. Procedures for placement
   e. Feed-back and follow-up on graduates
   f. Administrative support to vocational education
   g. Hands-on training

CAREER AWARENESS AND CAREER DEVELOPMENT MODEL PROGRAMS

Career Awareness and Career Development Program K-12 is being developd at Petersburg, Virginia, running from January 3, 1972, to June 30, 1973, funded in the amount of $121,000 under Part C of Public Law 90-576.

Also, a Career Awareness Program K-7 is being developed at the W. Kuhn Barnett Elementary School in Radford, Virginia—fund under Part C of Public Law 90-576.

The details on the organization and administration of these programs are available upon request.

For further information on any of the foregoing programs address Mr. George Orr, Director, Division of Vocational Education, State Department of Education, Richmond, Virginia 23216.

COUNCIL ON-SITE SURVEY ACTIVITIES

During the spring and summer of 1972 an effort was made by members of the Research and Evaluation Committee of the Council to visit a number of secondary schools and community colleges for the purpose of gathering information on enrollment, instructional programs, and job placement and follow-up of graduates and job-ready leavers. Much valuable information was obtained and a real salutary effect was observed. Due primarily to these contacts, two community colleges initiated follow-up efforts that resulted in compiling data on all persons in their first year of employment indicating, (1) Place of employment; (2) Job Title; (3) Job Responsibilities; (4) Adequacy of school training; and (5) Employer Satisfaction.

This seems to be a worthwhile council activity and one that should be continued and expanded as a means of getting community input for purposes of making the vocational education offerings more relevant to the needs of people.

2496

RECOMMENDATIONS FOR FY 1973

2497

JOB PLACEMENT ASSISTANCE AND FOLLOW-UP

Rationale: High on the Council concerns in its Second Report was the continuing problem for administrative recognition that job placement and periodic follow-up is an integral part of occupational preparation. It is axionmatic that job performance is the whole purpose of job preparation and the ultimate values of the process are realized only in the proper placement and evaluation of the training program reflected by job performance. Therefore, the Council once again emphasizes the point.

While the burdensome task of statistical tabulation and up-dating of records of graduates and leavers has heretofore been great, it can soon be done with greater ease and accuracy through the utilization of the Vocational Education Management Information System (VEMIS). (Appendix F)

Recommendation 1. Because the Council believes that job placement and periodic follow-up is essential in determining the relevance of the program of Vocational/Technical education to the world of work, it strongly recommends that the facilities of the emerging Vocational Education Reporting System be employed to effective job placement and periodic follow-up and that this aspect of the vocational education program be accepted as an administrative responsibility by the highest authority at local and State levels.

COMMUNITY IN-PUT—LOCAL ADVISORY COUNCILS OR COMMITTEES

Rationale: On the assumption that career/vocational education must grow out of and in turn serve the needs of the people primarily in the community oriented action on and reaction to the operation of each career awareness and preparatory occupational program in the school. There appears to be no better way of giving real visibility and revalency to the purposes and operation of vocational education.

In a similar manner and for essentially the same reason that Congress authorized the National Advisory Council on Vocational Education and likewise created the fifty State Councils, there should be local school division and individual school opportunity for lay constituent in-put and evaluation of outcome. Opportunity would seem to exist for such advisory bodies at the highest administrative level as well as at the local director, service supervisory and craft program levels of operation. In the firm belief that lay advisory councils or committees have a real potential for increasing the effectiveness of career/vocational education in the community, the Council again offers the following Recommendation:

Recommendation 2: In view of the potentially great benefits to be derived from local advisory input, it is recommended that the State Department of Vocational Education be urged to encourage the development of local Division-Wide; Discipline-Wide; and Occupational Trade and Craft advisory committees which will meet for active consideration of plans, programs, and progress on a reasonable periodic schedule. The organization and operation of such bodies will establish operating procedures according to adopted guidelines.

CAREER EDUCATION—K-16

Rationale: Consonant with the generally accepted necessity of providing a comprehensive exposure to and orientation in the world of work for all persons, this Council restates its position on the concept of career education. (See Statement page 3)

As stated in the Council's position statement recited elsewhere in this report, it is the firm conviction that every child must have a keen sense of awareness of the world of work K through grade 5; be directed in a program of career orientation and investigation in occupations in grades 6 and 7; have the opportunity for career exploration in grades 8 and 9; and (for those who elect an occupational objective) have the opportunity for job preparation at the occupational entrance level of competence in grades 10-12.

Inasmuch as most persons will be expected to change jobs three or more times during his work span, there should be opportunity for him to move freely in and out of training through ready access to post-secondary vocational programs grades 13-16 or in adult or continuing education programs.

Recommendation 3. The imperatve educational need is for a program of career awareness, orienta-

tion, exploration, and job preparation for K-12. Effective implementation of this recommendation will require validation of content and procedures as developed in the ongoing experimental models, career oriented teaching staff, and guidance counselors. Availability of acceptable staff competence will relate to teacher-counselor education programs. Implementation of this objective is urged at the earliest possible time.

COOPERATIVE LEARNING/EARNING PROGRAMS

Rationale: The fine experiences of more than two decades relating to "Work-Training" programs in Agriculture, Business and Office, Distributive, and Trades and Industrial Education have demonstrated the unusual values to be derived from cooperative education. The Council believes that every student in the Secondary and Post-Secondary school who has made a firm commitment to preparation for an occupational career should have the advantage of supervised work experience while in his terminal years in formal schooling. Cooperative work-training is generally conceded to be one of the most relevant and effectve means of achieving maximum job competence.

Of the 140 school divisions in the State, only 94 divisions had one or more cooperative LEARN/EARN programs. It appears that many more vocational oriented students should have access to this kind of pre-graduation experience.

All five subject matter-related cooperative work-training programs have demonstrated unusual vitality in their growth patterns and general public acceptance for more than twenty years since the last area was included. The Cooperative LEARN/EARN experiences have been exceptionally worthwhile.

While the obvious and perhaps primary values derived from the cooperative work-training programs may have been in their greater functional job preparation and individual economic rewards, there have been many and varied concomitant values such as student self-fulfillment and improved school-community relations.

Some idea of the over-all vitality of this special area of vocational education can be seen in the tabulation of results shown in Appendix J.

Recommendation 4. Whereas there is a wide gap between the numbers enrolled in vocational classes in the high schools, 336,380, and those participating in the cooperative programs, 23,060, the Council urges further consideration of and greater efforts to involve more students in their terminal school years on on-the-job programs.

ADDITIONAL CONSTRUCTION AND FACILITIES FOR VOCATIONAL EDUCATION

Rationale: There has been a phenominal growth in the enrollment in vocational subjects during the past five years, 1967-1972. Observe the average annual percentage increase in vocational subjects has been about 16% as compared to less than 4% for all secondary schools and resulting in 78.56% increase over the 5-year period. The level of funding for additional building and related ancillary services has more than kept pace with the added persons served. Total funding from Federal, State and Local sources including grants from Appalachia increased from $24,160,866 for FY 1967 to $46,248,795 for FY 1972. This is a percentage increase of 91.42% compared with the 78.56% gain in enrollment. (Appendix I)

One of the arresting facts of the annual funding picture as seen from reference to the chart, Appendix I, is the almost static relative proportion of Federal and State funding. With the restricted resources, the State Vocational agency has made significant progress in expanding facilities. Notably, during the last fiscal year the number of Area Vocational programs has advanced from 53 to 59. This is a commendable improvement.

Recommendation 5. In consequence of the rapidly growing emphasis on career/vocational education and the resulting increases in enrollments in vocational education, the Council strongly recommends that efforts be made to encourage the State Departmnt of Education and the State Legislature to appropriate larger funds for vocational education so as to more adequately meet the needs as reflected in the steadily increasing number of persons requiring the additional services with particular reference to

the needs at the post-secondary level. (Appendix G, H, and I)

IMPLEMENTATION OF VIRGINIA EDUCATION REPORTING SYSTEM

Rationale: Of the five legislative mandates, the one requiring the State Advisory Council to prepare and submit to the State Board, National Advisory Council and to the U. S. Commissioner of Education an evaluation report annually on or before December 1, entails the greatest detailed effort. Obviously, any valuative effort requires detailed study and analyses of validated data embracing every aspect of educational policy, procedure, and programming pertaining to the State-wide system of education—both public and private and at all levels.

The Council has experienced extreme difficulty in the past two years in gathering these data from the available sources, classifying, analyzing, and synthesizing it in required form for the preparation of the Report.

Much of the detail has been unavailable due to the lack of a comprehensive data system. But with the provision for the computerized Virginia Vocational Education Reporting System as a service of the Division of Vocational Education with a professional staff of five persons, it is assumed that there will be adequate data available on a time basis such as to be highly valuable for the Council's use in making judgments concerning the adequacy of the vocational programs in local geographical areas as well as on a composite State basis.

Recommendation 6. The State Department will take the necessary steps to perfect the Vocational Education Evaluation Project (VIPSU) and its Vocational Education Reporting System (VERE) with all appropriate measures and supply the local school divisions, teacher education institutions, the State Advisory Council on Vocational Education, the State Board of Education, the State Department of Community Colleges and other educationally related persons and organizations with the findings at appropriate time intervals.

STANDARDS OF OCCUPATIONAL READINESS

Rationale: Since the focal point of Career/Vocational education is education for better living through higher job competence, it follows that provisions should be made for a procedure for making realistic audits relative to this prime objective insofar as research resources are available.

Thse kinds of data may not be readily available from the VERS system. But are to be had primarily from person-to-person contacts involving both the employers of graduates and occupationally ready leavers and with employees on as broad as base as possible.

This procedure is an integral phase of the previously recommended follow-up provision. Such an audit is a proper concern of the Advisory Council, and a good case for this procedure was made in the audits by Danville Community College and Virginia Western Community College largely through the motivations by two Council members during the year under review.

Recommendation 7. The leadership of the Council is urged to work in close cooperation with the State Director's staff in compiling a significant amount of information from the employers of occupationally prepared graduates and job-ready school leavers to serve as a reliable measure of the effectiveness of the instructional program. Such information is to be gathered through personal interview and/or questionnaire procedure.

ARTICULATION OF VOCATIONAL EDUCATION AND LABOR DEMAND AND SUPPLY

Rationale: With the increasing trend toward specialization of the work force, due to technological advances, there is greater need to more closely align the preparation for entry into the labor force with training content and job responsibilities. The development and refinement of the Vocational Education Research System (VERS) will ostensibly be in position very soon to render valuable assistance and information for planning and administraton at a highly responsible level. There is great need for more timely and accurate data regarding the validity of the content and procedures used in preparation of workers.

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The other side of the Training/Employment coin needs to show more precisely the extent to which employment demand and availability of supply are present. The two related and interdependent aspects of the problem requires continuous coordination. It would seem to follow that there will need to be a closer working relationship between the Division of Vocational Education and the Virginia Employment Commssion in particular as well as with other concerned state agencies such as the Department of Labor, and the Vocational Rehabilitation Commission. (Appendix M, N and O)

Recommendation 8. The Advisory Council on Vocational Education strongly recommends that the current cooperative arrangement among the several State agencies concerned with the preparation, placement, and long-term employment of persons be continued and improved by coordinated efforts through intrapersonnel arrangements.

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APPENDICES

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— Appendix E — Community College Location 35
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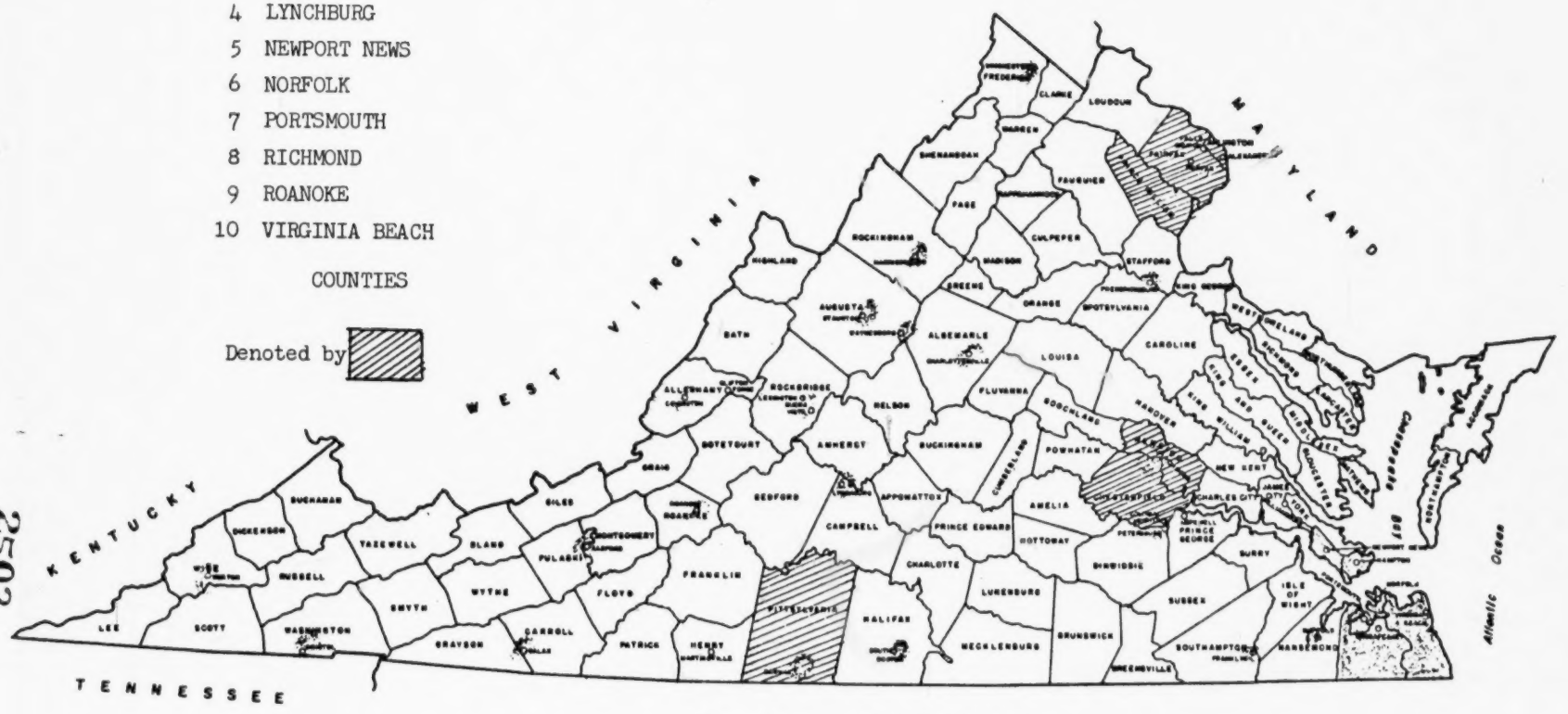
CITIES

1 CHESAPEAKE
2 DANVILLE
3 HAMPTON
4 LYNCHBURG
5 NEWPORT NEWS
6 NORFOLK
7 PORTSMOUTH
8 RICHMOND
9 ROANOKE
10 VIRGINIA BEACH

COUNTIES

Denoted by



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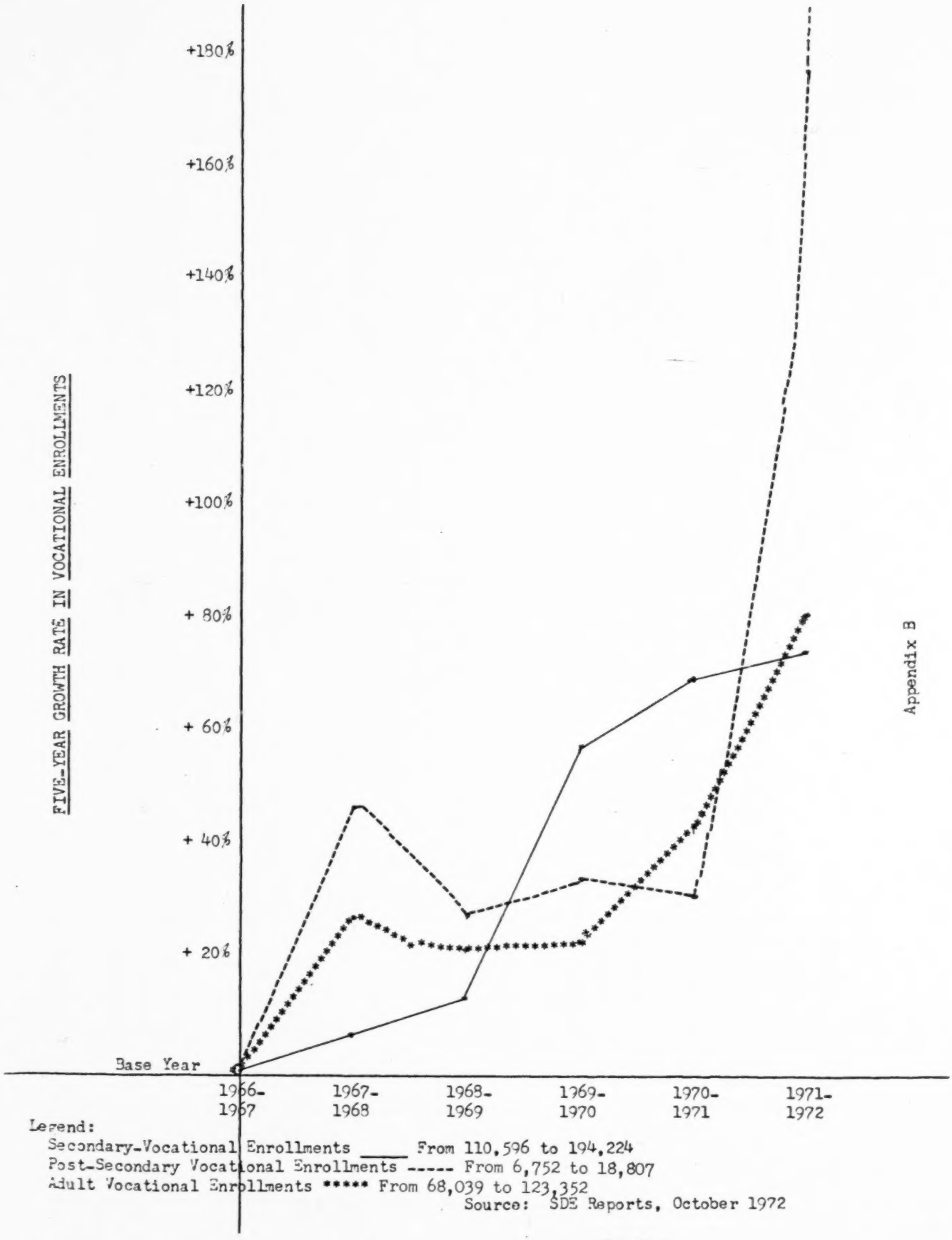
MAP C showing location of the 15 school divisions identified as having the largest number of dropouts and a corresponding high number of unemployed persons as reported in the most recent six-months summary of POPULATION AND WORK FORCEDATA f m the Virginia Employment Commission.

Source: State Plan for FY 197



Appendix B

Legend:
Secondary-Vocational Enrollments _____ From 110,596 to 194,224
Post-Secondary Vocational Enrollments ----- From 6,752 to 18,807
Adult Vocational Enrollments ***** From 68,039 to 123,352

Source: SDE Reports, October 1972

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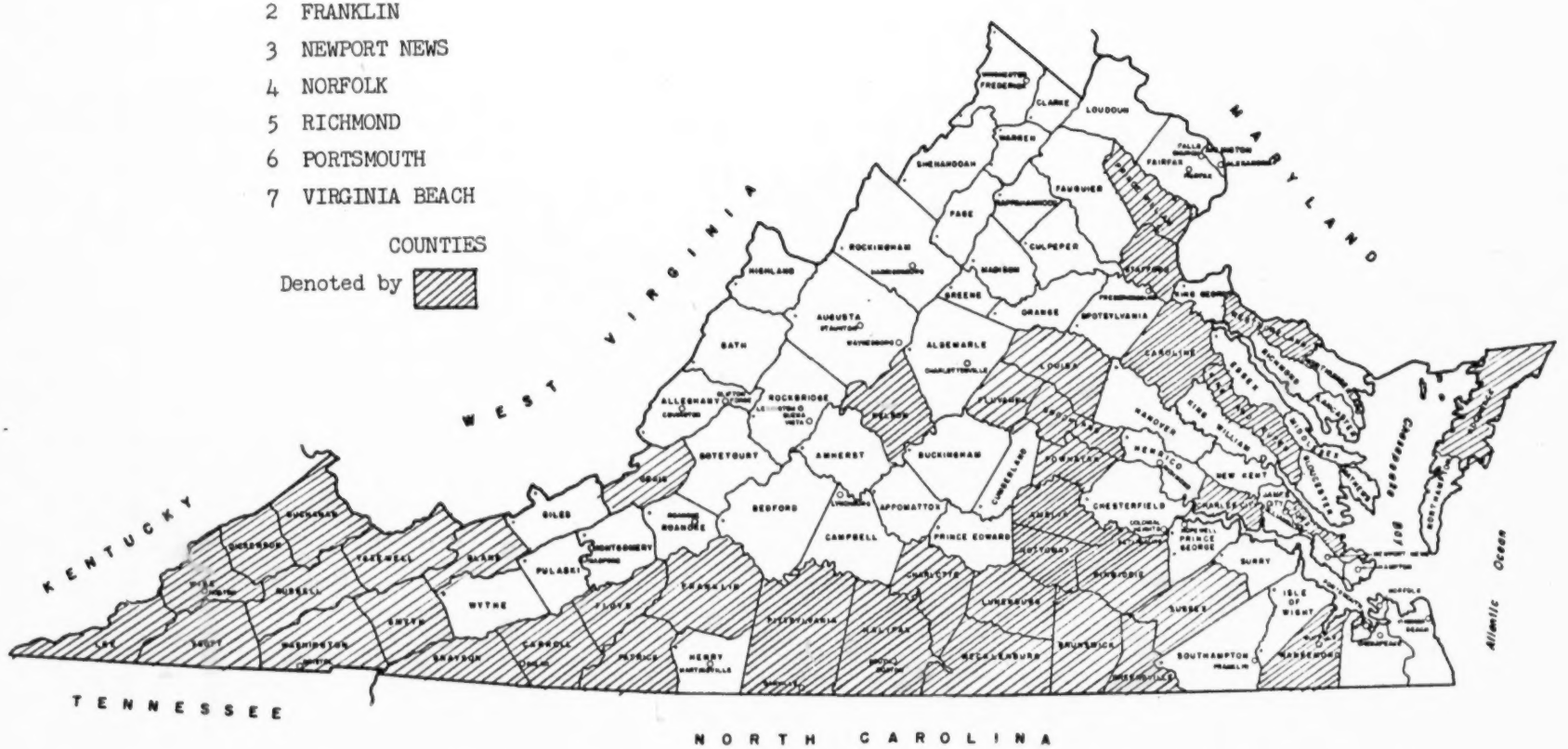
CITIES

1 CHESAPEAKE
2 FRANKLIN
3 NEWPORT NEWS
4 NORFOLK
5 RICHMOND
6 PORTSMOUTH
7 VIRGINIA BEACH

COUNTIES

Denoted by



MAP A showing the 45 school administrative Divisions that are most severely economically depressed. These divisions have been identified by use of the TOTAL CONTROL FACTOR for ranking purposes

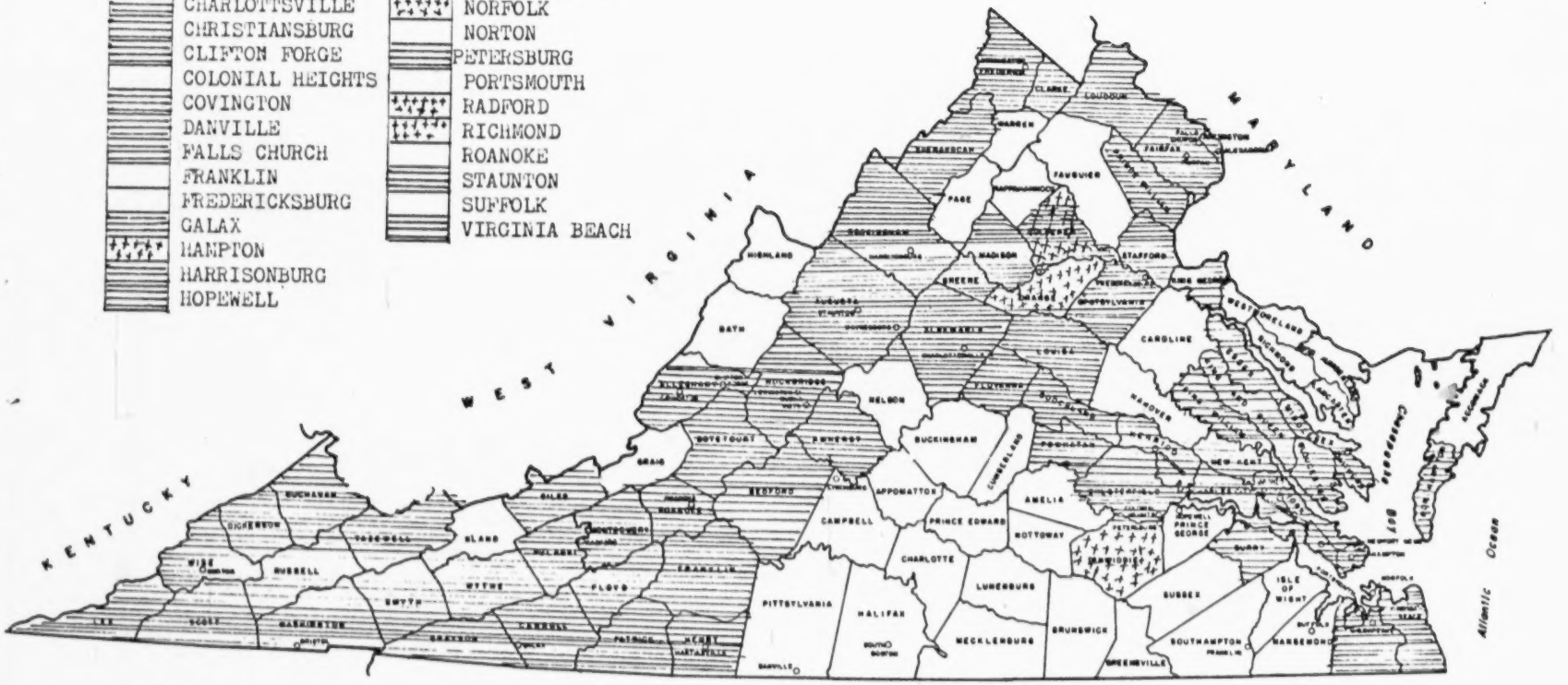
Source: State Plan

Appendix C

DR NO TA - 2E

CITIES AND TOWNS

ALEXANDRIA
BLACKSBURG
BRISTOL
BUENA VISTA
CHARLOTTSVILLE
CHRISTIANSBURG
CLIFTON FORGE
COLONIAL HEIGHTS
COVINGTON
DANVILLE
FALLS CHURCH
FRANKLIN
FREDERICKSBURG
GALAX
HAMPTON
HARRISONBURG
HOPEWELL
LEXINGTON
LYNCHBURG
MARTINSVILLE
NEWPORT NEWS
NORFOLK
NORTON
PETERSBURG
PORTSMOUTH
RADFORD
RICHMOND
ROANOKE
STAUNTON
SUFFOLK
VIRGINIA BEACH
WAYNESBORO
WILLIAMSBURG
WINCHESTER



STATUS OF SECONDARY VOCATIONAL EDUCATION FACILITIES BY SCHOOL DIVISION AS OF JULY 1, 1972

LEGEND

SCHOOL DIVISIONS WITH ADEQUATE VOCATIONAL BUILDINGS UNDER CONSTRUCTION OR COMPLETED

SCHOOL DIVISIONS THAT HAVE COMPLETED SOME CONSTRUCTION AND HAVE PLANS FOR MORE

SCHOOL DIVISIONS THAT NEED TO BUILD VOCATIONAL BUILDINGS

Appendix D

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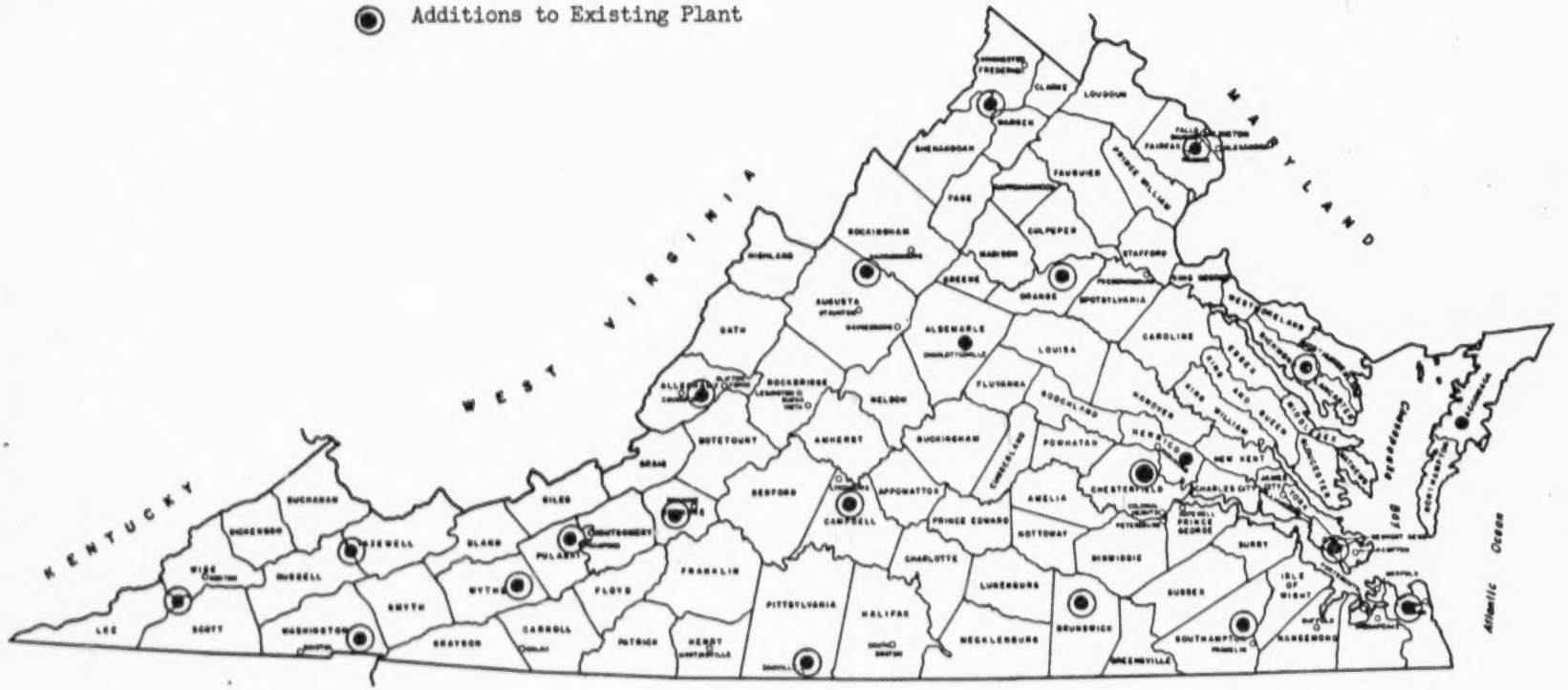
LEGEND:

● New Plant

◉ Additions to Existing Plant



MAP J showing Community College construction for the twenty-two locations, in operation or planned for completion 1972 through 1976.

Source: State Plan for FY 1973

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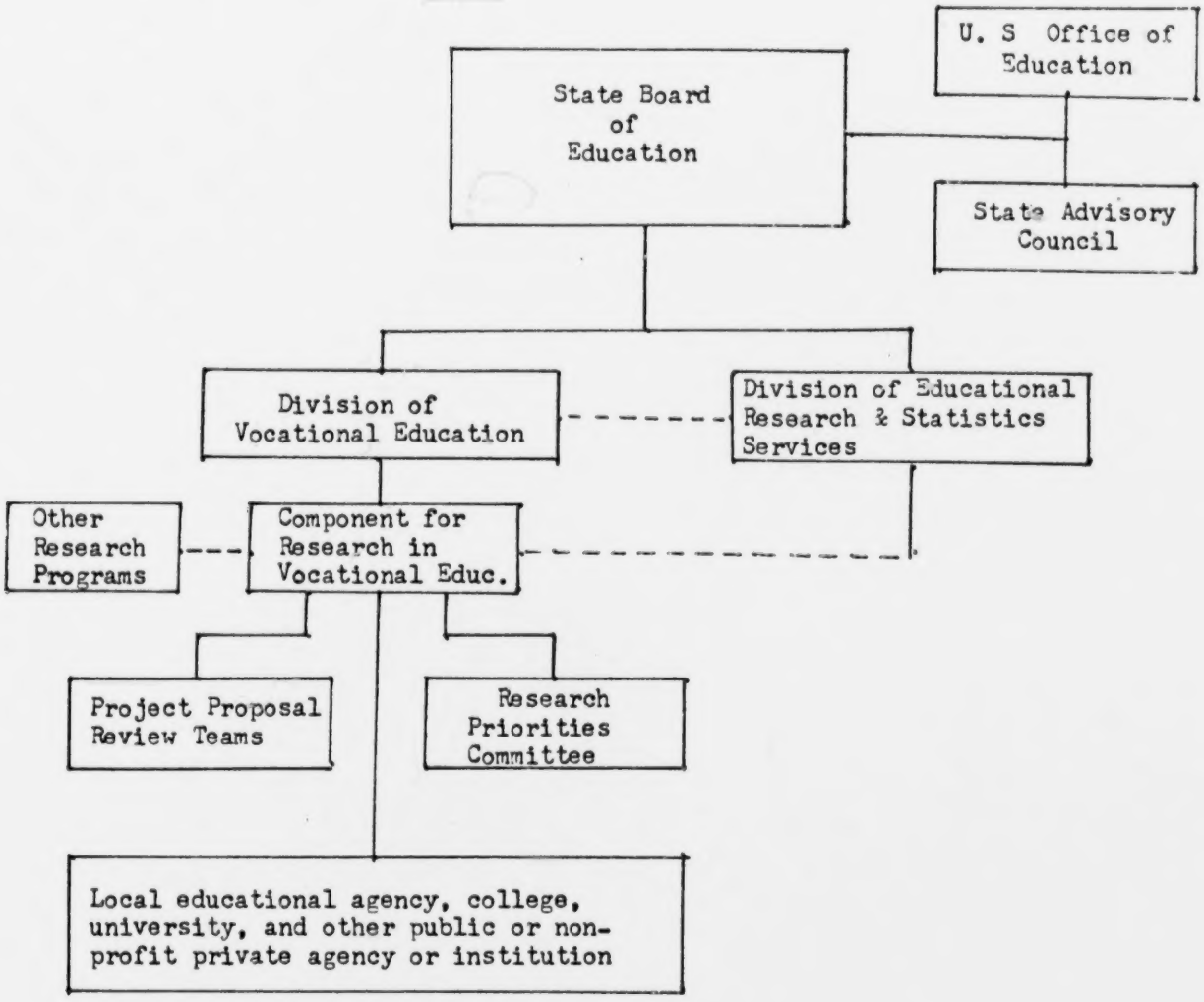
2507

Organizational Chart of Component for Research in Vocational Education


U. S Office of Education
State Board of Education
State Advisory Council
Division of Vocational Education
Division of Educational Research & Statistics Services
Other Research Programs
Component for Research in Vocational Educ.
Project Proposal Review Teams
Research Priorities Committee
Local educational agency, college, university, and other public or non-profit private agency or institution

Appendix F

2508

Table 7 A

Construction Projects Needed in the Next Five Years
Projects Should Start in the Fiscal Year Indicated

Fiscal Year		Number Projects	Total Student Capacity at Any One Time
1973	(S)	20	5,225
	(PS)	8	3,970
1974	(S)	12	3,800
	(PS)	1	350
1975	(S)	11	2,900
	(PS)	7	2,000
1976	(S)	5	1,000
	(PS)	5	1,690
1977	(S)	5	1,000
	(PS)	6	2,425

(S) Secondary Projects 53
(PS) Post-Secondary Community College Projects 27
State Plan FY 1973 I-97

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GROWTH PATTERNS IN ENROLLMENTS IN ADULT EDUCATION FOR FY 1964 to FY 1972 BY INTEREST AREAS

Programs	1964	1972	% Change
Agriculture	9,042	6,825	(-25.51)
Distributive	18,815	38.919	106.85
Health	294	1,430	493.10
Home Economics (occupational)	3,482	9,739	179.69
Office Education	1,684	12,543	644.83
Technical	1,330	1,611	21,12
Trade and Industrial	10,017	52,190	421.01
Special Programs	—	95	—
Total Enrollment	48,664	123,352	153.47%

Source: State Department of Education Reports

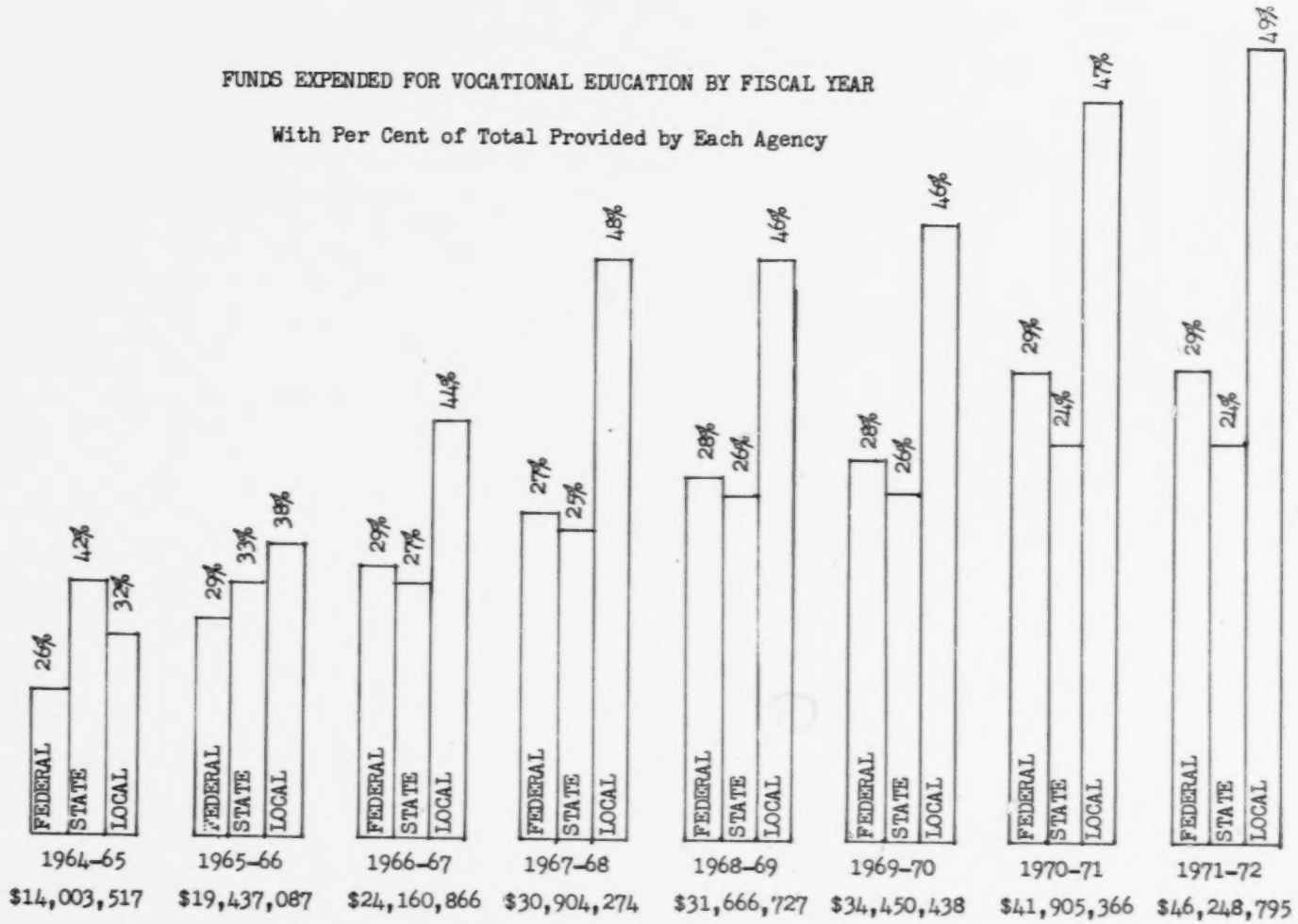
Appendix H

2510

2511

FUNDS EXPENDED FOR VOCATIONAL EDUCATION BY FISCAL YEAR

With Per Cent of Total Provided by Each Agency



Total for 1966-67 includes $13,509 from Sec. 214 Appalachian Regional Development Act.
Total for 1967-68 includes $1,296,875 from Appalachian Funds (Sec. 211- and Sec. 214)
Total for 1968-69 includes $2,033,877 from Appalachian Funds (Sec. 211- and Sec. 214)
Total for 1969-70 includes $2,012,661 from Appalachian Funds (Sec. 211- and Sec. 214)
Total for 1970-71 Includes $2,453,424 from Appalachian Funds (Sec. 211- and Sec. 214)
Totals for 1971-72 includes $1,230,974 from Appalachian Funds (Sec. 211- and Sec. 214) and
$ 29,981.54 from Special Grant for Career Education.

Source: State Department of Education Reports

Appendix I

VOCATIONAL EDUCATION COOPERATIVE PROGRAMS

COMPARATIVE ANALYSIS OF ECONOMIC STATUS FOR FY 1969-72

SERVICE	1969	1970	1971	1972
Agricultural Education				
No. of Students	2,360	2,751	2,958	2,278
Earnings	$5,093,785.00	$6,126,900.00	$ 5,351,599.00	$6,087,867.00
Business Education				
No. of Students	1,936	2,088	2,455	2,565
Earnings	$2,802,956.00	$2,530,541.00	$2,629,444.00	$3,132,434.00
Distributive Education				
No. of Students	9,585	12,943	14,208	15,355
Earnings	$7,326,947.08	$ 6,353,439.00	$ 8,937,267.37	$10,036,767.80
Trade & Industrial Education (Industrial Cooperative Training Program)				
No. of Students	2,385	2,389	2,836	2,862
Earnings	$3,230,140.00	$ 3,451,714.00	$3,600,000.00	$ 4,500,000.00
Total				
No. of Students	16,266	20,171	22,457	23,060
Earnings	$17,741,828.08	$ 18,462,594.00	$ 20,518,310.37	$ 23,757,068.80

VIRGINIA VOCATIONAL EDUCATION STUDENT ENROLLMENT FORM VEEP-1

1. SCHOOL NAME

2. COURSE & TEACHER NAMES

3. LAST NAME–FIRST NAME–MIDDLE INITIAL

4. ADDRESS–STREET, P.O. BOX, OR ROUTE & BOX

5. CITY

6. STATE

- VA
- NC
- DC
- TN
- KY
- WV
- MD

7. ZIP CODE

8. AGE

9. PHONE NUMBER

10. SOCIAL SECURITY NUMBER

MARK HERE IF NO SOCIAL SECURITY NUMBER

11. GRADE

- Below 7
- 7
- 8
- 9
- 10
- 11
- 12
- Ungraded

12. SEX

- MALE
- FEMALE

13. ETHNIC GROUP

- AMERICAN INDIAN
- NEGRO OR BLACK
- SPANISH AMERICAN
- ORIENTAL
- CAUCASIAN OR OTHER

14. ALL VOC ED PROGRAMS ENROLLED IN

AG BUS DE T&I HOME EC C&H OCCUP.

15. AFTER HIGH SCHOOL I PLAN TO:

- Get job or be a homemaker
- Enter military service
- Go to vocational-technical school
- Go to 2 year college
- Go to 4 year college
- Undecided

16. DIV. CODE

17. SCHOOL CODE

18. COURSE CODE

19. O.E. CODE

20. FOR INSTRUCTORS ONLY

A YES NO
B YES NO
C YES NO
D YES NO
E YES NO
F YES NO

DC 30 20:
OPTICAL SCANNING CORPORATION © 1970

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Appendix K

Form S 101 - Employer/Employee

EMPLOYER INTERVIEW

A. Name of Employee_____Position_____

B. Date of initial employment_____

C. Job Title_____

D. Employer comments - strong points:_____

Deficiencies_____

_____

E. Promotional opportunities_____

_____

_____

F. Additional training needed_____

_____

G. Comments:_____

_____

H. Name of Employer_____Position_____Date_____

EMPLOYEE INTERVIEW

A. School Attended_____Length of Training_____

B. Major preparation for employment (courses taken)_____

_____

C. Was the preparation adequate?_____Inadequate_____

D. Did school assist in placement?_____

E. What other assistance?_____

F. What are your opportunities for advancement?_____

_____

_____

G. What additional job training do you need?_____

_____

H. Do you have plans for further training?_____

_____

I. Are you currently enrolled in continuing education?_____

Where?_____Courses_____

J. Comments_____

_____

Interviewer_____

Appendix L

2514

FIVE YEAR GROWTH IN LABOR FORCE FOR SELECTED CATEGORIES

Category		1966-67	1967-68	1968-69	1969-70	1970-71	5 Yr. Change
Manufacturing	Employed	346,000	362,600	371,000	365,000	362,200	
	Per Cent Change ±		+4.79	+2.31	(-1.62)	(- .77)	+4.68
Non-Manuf.	Employed	1,027,200	1,070,100	1,114,800	1,153,300	1,193.00	
	Per Cent Change ±		+4.17	+4.17	+3.45	+3.44	+7.99
Trade - Retail Wholesale	Employed	271,600	280,300	294,600	303,600	311,800	
	Per Cent Change ±		+3.20	+5.10	+3.05	+2.70	+14.80
Service Occupations	Employed	188,600	198,400	210,800	220,000	227,300	
	Per Cent Change ±		+5.19	+6.25	+0.43	+3.31	+20.51
Government	Employed	313,500	330,900	340,100	354,000	373,000	
	Per Cent Change ±		+5.55	+2.78	+4.08	+5.36	+18.97
Agriculture	Employed	90,200	88,100	86,500	83,200	81,000	
	Per Cent Change ±		(-2.33)	(-1.84)	(-3.82)	(-2.65)	(-10.20)

Source: Virginia Employment Commission Annual Summary Labor Force Estimates

2515

COMPARATIVE GROWTH OF ENROLLMENTS IN TOTAL SECONDARY SCHOOLS; VOCATIONAL SUBJECTS; VOCATIONAL GRADUATES; AND VIRGINIA LABOR FORCE. 1967-1972

Base Years	Total Secondary Grades	% Changa From Previous Year	Vocational Enrollment	% Change From Previous Year	Vocational Graduates	% Change From Previous Year	Virginia Labor Force	% Change From Previous Year
(1)	(2)		(3)		(4)		(5)	
Fiscal 1967	400,462		188,386		50,104		1,691,800	
Fiscal 1968	415,846	+3.84	219,301	+16.41	50,942	+ 1.67	1,748,200	+3.33
Fiscal 1969	433,377	+4.21	222,641	+ 1,52	53,392	+ 4.80	1,803,200	+3.14
Fiscal 1970	452,094	+4.31	273,357	+22.77	56,006	+ 4.89	1,841,800	+2.14
Fiscal 1971	472,380	+4.48	301,904	+10.44	57,455	+ 2.58	1,893,580	+2.82
Fiscal 1972	478,153	+1.22	336,383	+11.42	59,779	+ 4.04	1,921,100	+1.44
%Change 1967-1972		+19.40		+78.56		+19.30		+13.55

Sources: Cols. 2,3,4 State Department of Education Annual Reports
Col. 5 Annual Reports State Employment Commission

2516

EMPLOYMENT OPPORTUNITIES RELATED TO VOCATIONAL EDUCATION PROGRAMS

LABOR DEMAND AND SUPPLY SUMMARY

March, 1972

OE Code	Instructional Program (1)	Current Employment (2)	Projected Labor Demand (3) 1973	Projected Labor Supply: Vocational Ed. Output (4) 1973	Per Cent of Demand (5)	Other Sectors Output (6) 1973	Per Cent of Demand (7)	Total Output (8) 1973	Per Cent of Demand (9)
	TOTAL	1,822,700	68,400	33,229	48.58	23,905	4.95	57,134	83.52
01.	Agricultural on-farm	69,500	1,100	746	67.81	220	20.00	966	87.81
01.	Agricultural off-farm	39,000	1,500	792	49.74	435	32.06	1,227	81.80
04.	Distribution & Marketing	374,200	17,600	8,406	47.76	6,500	36.93	14,906	84.69
07.	Health	33,800	3,600	1,616	44.88	2,100	58.33	3,716	103.22
09.	Home Economics (Gainful)	54,800	5,600	653	41.66	1,200	21.42	1,853	33.08
14.	Office	310,000	19,100	6,821	35.71	2,000	10.47	8,821	46.18
16.	Technical	60,300	1,500	791	52.73	450	30.00	1,241	82.73
17.	Trade & Industry	375,700	18,400	13,404	72.84	11,000	59.79	24,404	132.63

Columns (1), (2) and (3) prepared by the
Manpower Research Division
Virginia Employment Commission
March 27, 1972

Columns (4) and (6) Figures cited from Table 1, State Plan for FY 1972.
Columns (5), (7), (8) and (9) computations.

2517

VT 019 852

VT 019 852
DAVIS, GENE
IDENTIFICATION OF EDUCATIONAL AND TRAINING NEEDS OF UNEMPLOYED YOUNG ADULTS IN SUMMERS COUNTY. FINAL REPORT.

SUMMERS COUNTY BOARD OF EDUCATION, HINTON, W. VA.
WEST VIRGINIA STATE DEPT. OF EDUCATION, CHARLESTON. BUREAU OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION.
MF AVAILABLE IN VT-ERIC SET.
PUB DATE - 31JUL72 32P.

DESCRIPTORS - RESEARCH PROJECTS; *AREA STUDIES; FEASIBILITY STUDIES; *EDUCATIONAL NEEDS; *UNEMPLOYED; *YOUNG ADULTS; OCCUPATIONAL SURVEYS; *DROPOUT IDENTIFICATION; DROPOUT RESEARCH
IDENTIFIERS - SUMMERS COUNTY WEST VIRGINIA

ABSTRACT - THIS SURVEY INVOLVING 97 PERSONS BETWEEN THE AGES OF 14 AND 29 WAS CONDUCTED TO IDENTIFY UNEMPLOYED AND UNDEREMPLOYED OUT OF-SCHOOL YOUTH IN SUMMER COUNTY AND THE SURROUNDING AREA AND TO DETERMINE THOSE WHO HAD A POTENTIAL FOR CONTINUED FORMAL EDUCATION AND SKILL TRAINING. SOME OF THE FINDINGS INCLUDED: (1) AS MANY AS 64 PERCENT OF THOSE SURVEYED HAD COMPLETED LESS THAN 10 YEARS OF FORMAL EDUCATION, (2) A TOTAL OF 71 PERCENT REGRETTED HAVING DROPPED OUT OF SCHOOL AND CITED AS THEIR BASIC REASON FOR DROPPING OUT, NOT BEING ABLE TO KEEP UP WITH THEIR WORK, (3) A TOTAL OF 25 PERCENT ARE MARRIED, AND OF THIS PERCENTAGE, ONLY 39 PERCENT OF THE FATHERS AND 9 PERCENT OF THE MOTHERS HAVE JOBS, CITING THE BASIC REASON FOR THIS AS LACK OF EDUCATION, (4) AN OVERWHELMING NUMBER OF THE RESPONDENTS INDICATED AN INTEREST IN PARTICIPATING IN SOME TYPE OF TRAINING PROGRAM BECAUSE ONLY 15 PERCENT HAD BEEN ENROLLED IN SKILL TRAINING PROGRAMS PREVIOUSLY, (5) MOST OF THE PARENTS SURVEYED WERE STABLE CITIZENS, AND (6) THE AREAS IN WHICH MOST YOUTHS PREFERRED TRAINING WERE AUTO MECHANICS, CARPENTRY, NURSING, AND SECRETARIAL TRAINING. (AUTHOR/SN)

Final Report

Project Number WV-72-R-4

Grant Number DVE-30-WV-72-R-4

Identification of Educational and Training Needs of Unemployed Young Adults in Summers County

Gene Davis

Summers County Board of Education
Box 430
Hinton, West Virginia 25951

July 31, 1972

West Virginia
State Board of Education
State Department of Education
Bureau of Vocational, Technical and Adult Education
Division of Vocational Education

VT019852

2519

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
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Final Report

Project Number WV-72-R-4

Grant or Contract Number DVE-30-WV-72-R-4

Identification of Educational and Training Needs of Unemployed Young Adults in Summers County

Gene Davis
Summers County Board of Education

Hinton, West Virginia 25951
July 31, 1972

The work presented or reported herein was performed pursuant to a grant (or contract) with the State Board of Education, Division of Vocational Education. However, the opinions expressed herein do not necessarily reflect the position or policy of the State Board of Education, and no official endorsement by the State Board of Education shall be inferred.

West Virginia
State Board of Education
State Department of Education
Bureau of Vocational, Technical and Adult Education
Division of Vocational Education

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ATTITUDE OF THE SCHOOL DROPOUT, HIS PARENTS AND OTHERS TOWARD THE SURVEY, THE SCHOOL DROPOUT, THE NEW VOCATIONAL SCHOOL AND THE PUBLIC SCHOOL SYSTEM

Visit the home and spend a little time talking with the family members and you will come away with a true understanding as to their attitude toward a particular area of discussion.

First, you must have a vital reason for the visit and one that is of interest to the family. Then, you must communicate this interest in a manner that is acceptable to the particular member of the family you are privileged to visit. Your manner of approach, what you say, and how you say it must be understood and appreciated by the family member listening or you will get no closer to a fruitful interview than a few courteous words through an open door.

What is the attitude of the school dropout, his parents, other members of the family, his neighbors, and others toward the educational system that he has failed or has failed him? Who was at fault, the home, the school, or the individual? How realistic is it for the dropout to return to regular school? What is the attitude of the interested parties toward the individual dropout entering an Adult Education Class and working toward a High School Equivalency Certificate? What job-training program would seem to meet the need and ability of the dropout?

During the Spring and Summer of 1972 a survey was conducted through home visits plus communication by phone and the mail concerning the 700 dropouts of the past five years in Summers County, West Virginia.

The length of the average visit was more than an hour. The basic relationship that existed between the home and school was revealed. The underlying cause for each school dropout was readily apparent as the year to year existence of the individual's life unfolded. In general the average interview seemed to reveal the following:

1. Communication and understanding between the home as a unit and the school as a unit was non-existent.
2. The teacher exercised no understanding-attitude toward the individual student and his problems which made success for him, in school, most unlikely.
3. The school dropout and his parents were reluctant to criticize the school system. However, it was evident they considered the school had failed.
4. There seemed to be a tendency on the part of the school principal to solve pupil problems by sending them home.....dropping them out of school.
5. In most instances the dropout was a potential dropout due to his inability to cope with the school

curriculum and "The System". (The why of the potential for dropout is evident when the individual causes for dropout are analyzed.

6. The dropout, in nearly every instance, regretted that he was not back in regular school. However, in most cases the dropout realized that he could not be successful in "The System".

A most gratifying part of the survey was that of meeting so many parents and other adults. To locate an individual dropout it was often necessary to ask directions at many homes along the way. In the rural areas the Post Office, service stations,and country stores were favorite places to ask directions. Many times we talked with groups of men who were at work along the way.

All of these adults were courteous, considerate, and helpful. They were anxious to give us direction. They seemed to be interested in the individual dropout we were trying to locate, and they seemed to think the survey idea was good. The new vocational school and its potential always received their blessing.

BACKGROUND FOR THE STUDY

This research project was conducted in a realistic problem area. Summers County is a rural, economically depressed area (according to the Department of Commerce classification) comprised of 13,250 persons. Per capita income is $2,194.00 whereas the state average is $2,470.00. The dropout rate is 11% whereas the state average is 7%. Unemployment has consistently been over 6%.

Two, three or more happenings converted this area into the problem that exists today. Approximately twenty years ago Summers County was a rural farming area. Hinton, the county seat, was the economic center of the county and of the surrounding area. Hinton was important because it was a railroad center. Jobs connected with the railroad were the stable economic factors in Hinton and in fact, Summers County.

The steam engine was replaced by the diesel engine and with this change came consolidation of maintenance, therefore, within a short period of time the Hinton Shops were closed and many railroad jobs were no longer available.

The lure of jobs elsewhere resulted in a rapid migration of the youth from the small farms. The results being that the small farmer often was forced to cut back until the farm was no longer productive and thus was abandoned. Small farms were combined into larger farms with the advent of modern machinery. However, there still remains many small

farms in the county and surrounding area where boys and girls are growing up on farms that produce no more than food, clothing, and shelter. Young people are growing up on these farms almost completely in the "dark", in so far as earning a living away from the farm. They leave the farm; they must and will, with no salable skill to take their place among the unemployed, and most likely end up on welfare.

Another happening was the loss of the wide river bottoms along New River, which were flooded upon completion of the Bluestone Dam. Large quantities of early vegetables were harvested in this area and moved by wagon and truck to ready markets in the coal fields.

The loss of the railroad shops, the small farms, and the wide river bottoms plus the economic up-trend in other parts of the state and nation has left Hinton, Summers County, and the surrounding area in need of outside help, especially job training for the young adults. To get them ready for that better day that must surely come to the area as a result of the interstate system, potential tourism, increased vocational offerings, and perhaps some factories, we must act now.

Economic growth can and will come to the area when the young adults of the area are educationally and job-wise ready.

RESEARCH OBJECTIVES

The research or project objectives of this study were as follows:

1. To conduct a survey in Summers County and surrounding areas to determine the basic education and skill development needs of out-of-school youth and unemployed and under-employed young adults.
2. To determine interests of the survey polulation in participating in educational programs to meet their basic education and skill development needs.
3. To design an educational program in relation to the needs and interests identified as a result of the survey.
4. To identify existing educational and community resources which may be mobilized to meet the needs of the educational program designed.
5. To prepare and submit for consideration by the Vocational Division of the State Department of Education a proposal under the guidelines for disadvantaged projects.

OUTCOME OBJECTIVES

The outcome objectives of this project, many of which will be long range, are as follows:

1. To provide support and assistance to the out-of-school youth and the unemployed and under-employed young adults of the area through the provision of Basic and Vocational Education Programs.
2. To provide an opportunity to train for employment to the unemployed and under-employed young adults of the area.
3. To increase the number and percentage of young adults in basic education and vocational training programs.
4. To increase the number and percentage of young adults that possess a salable skill and who go into the field or related fields for which they are trained.
5. To increase the utilization of existing educational resources.
6. To increase the utilization of existing community resources in serving the out-of-school youth, unemployed and under-employed young adults.

METHODS USED IN CONDUCTING THE SURVEY

The purpose of the project was to search out as many out-of-school youth who were unemployed or underemployed and to determine those who have a potential for continued formal education and skill training.

The principals and guidance counselors in the schools of the area were contacted and a list of high school drop-outs for the past five years was secured.

Key people in the communities of the county were also contacted in regard to supplying information about other potential persons in the community whose names did not appear on the lists provided by schools.

After this information was obtained the additional personnel to assist in the research project were employed and oriented to the project. Training was provided in interviewing, use and purpose of survey instruments, and compiling and interpreting information obtained from the survey.

Instruments were developed to determine the areas of interest, potential and need for basic education and skill training needs of the target population.

This determination was made by means of interviews in the homes by qualified persons, by telephone, and by questionaires and follow-up communications mailed to the target population.

This was not a hurried affair and every precaution was taken to obtain accurate information so that a valid

determination could be made of the educational and skill training needs of the area. The focus was upon basic education, skill training, the person's reason for dropping out of school, the attitude of the individual and his family toward the school and school system, and their response to the new vocational school.

TABLE I

AGE OF PERSONS SURVEYED

	Number and Percentage In Each Category	
Age	Number	Per Cent
14	2	2
15	4	4
16	9	9
17	14	14
18	8	8
19	14	14
20	10	10
21	9	9
22	6	6
23	6	6
24	4	4
25	5	5
26 and over	6	6

As shown in Table I, six persons who were dropouts were under the age of 16. In these cases they had been dismissed by the principal for minor offenses, such as fighting on the school grounds, and were not allowed to return to school. Another reason was pregnancy or new babies.

The average age of the dropouts surveyed was 18.8 with a low of 14 and a high of 29 years of age. The largest number surveyed was in the 17 to 21 years of age group.

TABLE II

SEX OF PERSONS SURVEYED

Sex	Number and Percentage In Each Category	
	Number	Per Cent
Males	62	64
Females	35	36

Table II indicates that approximately two-thirds of the persons surveyed were males. The total list of dropouts we were seeking to contact had a proportionate number of males and females but in our efforts to contact the females we found that 67 had married and moved from the area. Also we found that a larger number of the females had been able to obtain employment.

The greatest factor in not being able to locate the male dropout was that 42 were in military service at the present.

TABLE III

LAST HIGH SCHOOL ATTENDED

High School	Number and Percentage In Each Category	
	Number	Per Cent
Hinton	59	61
Talcott	12	12
Sandstone	25	26
Other	1	1

Table III indicates, as we expected prior to beginning the survey, that the largest number of dropouts we were able to contact had last attended Hinton High as this is the largest school in the county. The least number had last attended Talcott High but conclusions cannot be derived from this as we were unable to get a list of the dropouts from '67-'71 as no records were available.

TABLE IV

REASON FOR DROPPING OUT

Reason	Number and Percentage In Each Category Number	Per Cent
Couldn't Keep Up & Lost Interest	44	45
Got Married	7	7
Could Not Get Along With Teachers	6	6
Kicked Out	10	11
Teachers not Interested In Me	22	23
Family Problems	2	2
Pregnancy	3	3
Illness	3	3

Table IV indicates several reasons for dropping out but the most significant ones are that 45% could not keep up with their work and lost interest; 23% did not feel that the teachers were interested in them; and 11% were kicked out of school. It is very evident from the information obtained that the schools were not meeting the needs and interest of the students. In talking with the dropouts the majority of them indicated that if programs and courses had been offered where they had been able to make a choice instead of being told what to take, they would have remained in school.

TABLE V

HIGHEST GRADE COMPLETED

Grade	Number and Percentage In Each Category Number	Per Cent
3	1	1
6	8	8
7	17	18
8	16	16
9	20	21
10	19	19
11	15	15
12	1	1

The significant finding in this category is that 64% of those surveyed had completed less than 10 years of formal education. The average grade completion was 8.7 for the entire group.

TABLE VI

REGRETTED DROPPING OUT

	Number and Percentage In Each Category	
Regrets	Number	Per Cent
Yes	69	71
No	8	8
No Comment	17	18
Not Yet	3	3

As is indicated by Table VI, the overwhelming majority, 71%, indicated they regretted dropping out of school. As is indicated by Tables IV and VII, the majority of those who regretted dropping out would have remained in school if they could have completed the assignments; could have had more individual attention; more subject areas were available from which to select; and if more vocational training had been available.

It is also significant that only 8% had not regretted dropping out. Six of these eight had been able to obtain employment and apparently were satisfied for the time being.

TABLE VII
WOULD HAVE REMAINED IN SCHOOL IF COULD HAVE COMPLETED ASSIGNMENTS

	Number and Percentage In Each Category	
Would Remain	Number	Per Cent
Yes	66	68
No	15	15
No Comment	16	16

Table VII is very significant in that 68% would have remained in school if they could have completed the assign-

ments. The majority stated that they were not given the individual attention which was needed and they felt that some of the teachers were not interested in whether they learned or not. They also indicated that in many instances they had been promoted to the next grade when they were not able to do the work in their present grade. As a result, they fell further and further behind each year until they could no longer keep up and thus became discouraged and dropped out. They also felt that they were promoted in many instances in order for a present teacher to get rid of them as the teacher had no compassion for a slow learner or for one who was behind and did not wish to be bothered with them.

TABLE VIII

DISTANCE FROM SCHOOL

	Number and Percentage In Each Category	
Distance	Number	Per Cent
2 miles or less	50	51
3 to 5	14	15
6 to 10	27	28
11 to 22	6	6

Table VIII indicates that 51% lived 2 miles or less from the school which they attended and that only 34% lived 6 miles or more from the school. This table would indicate that lack of transportation or excessive riding on a bus would not be a reason for dropping out of school. Of the 50 who lived 2 miles or less from school, 41 either walked or provided their own transportation and most of these lived within walking distance of Hinton High.

TABLE IX

RIDE SCHOOL BUS

	Number and Percentage In Each Category	
Ride Bus	Number	Per Cent
Yes	56	58
No	41	42

Table IX indicates that 58% of the students surveyed rode the school bus when they were in public school. Of the 42% who did not ride the bus, practically all of them lived 2 miles or less from the school which they attended and which was within walking distance.

TABLE X

CAR OWNERSHIP WHILE IN SCHOOL

	Number and Percentage In Each Category	
Car Ownership	Number	Per Cent
Yes	6	7
No	91	93

Table X indicates that only 6 or 7% of the persons surveyed owned a car while they were in school. Of this number three thought it was a good idea to have the car and three had no comment as to whether it was good or bad.

TABLE XI

MILITARY SERVICE

	Number and Percentage In Each Category	
Service	Number	Per Cent
Yes	6	7
No	91	93

Table XI indicates that only 7% had served in any branch of military service. Of significance is that only one of these six had earned his G.E.D. while in the service and had been able to obtain employment in the field in which he had received training while in service. A large percentage of those who have not been in military service have been called for examination or tried to join but were rejected for physical, mental, or educational reasons.

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TABLE XII

CAR OWNERSHIP AT PRESENT

Car Ownership	Number and Percentage In Each Cagegory Number	Per Cent
Yes	42	43
No	55	56

Table XII is significant for several reasons. As is indicated 42 or 43 per cent now own autos whereas only 6 owned autos while in school. It is also interesting to note from Table XV that only 17 are employed either full, temporarily or part time.

This also indicates that lack of transportation would not be a significant factor in these persons attending ABE classes or Vocational Training Programs.

Table XIII

DISTANCE FROM HINTON

Miles	Number and Percentage In Each Category Number	Per Cent
1 to 5	44	45
6 to 10	19	19
11 to 15	22	23
16 to 20	12	12

Table XIII indicates that 45% of those surveyed live one to five miles from Hinton. Referring back to Table XII which indicates that 43% now own autos there should be no transportation problem of any significance to attending ABE or Vocational Training Programs.

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TABLE XIV

MARITAL STATUS

Marital Status	Number and Percentage In Each Category	
	Number	Per Cent
Married	24	25
Single	72	74
Widow	1	1

Table XIV indicates that 24 or 25% of those surveyed are married. The significant factor is that 21 were females and only 3 males were married. As is indicated in Table II it was more difficult to locate the females because they had married and moved away from the area and Table XV indicates only 17 are employed full, temporarily, or part time. Of this number only 6 males had employment at the present time.

TABLE XV

EMPLOYMENT STATUS

Employment Status	Number and Percentage In Each Category	
	Number	Per Cent
Employed	13	14
Unemployed	80	82
Part Time	3	3
Temporarily	1	1

Only 18% of those surveyed had been able to obtain employment full, temporarily, or part time and 82% had been unable to obtain employment. More females had been able to obtain employment than males as only 6 males had been able to obtain employment.

TABLE XVI

INTERESTED IN TRAINING

Training	Number and Percentage In Each Category Number	Per Cent
Yes	90	93
No	7	7

Table XVI is very significant in that 93% said they would be interested in participating in some type of training program. Another factor that was brought out when this question was asked in the majority of the cases was that if vocational training programs had been available while they were in school they would have remained and could have tolerated "The System" by knowing that each day they would be receiving training in something they would like to do.

The 7% who were not interested in training currently had work which they liked to do and were apparently satisfied at the present.

TABLE XVII

EDUCATION OF PARENTS

Years of School Completed	Number and Percentage In Each Category Father Number & %		Mother Number & %	
0-4	19	20	6	6
5-9	60	61	59	60
10-12	11	11	17	18
High School, G.E.D. or Beyond	7	7	15	15

For the most part, the formal education level of the parents of those surveyed was very low. 81% of the fathers had less than 10 years of formal education and 65% of the mothers had less than 10 years of formal education.

Only 7% of the fathers and 15% of the mothers had completed high school, earned a G.E.D. or attended beyond the high school level.

It is significant that in practically all instances the mother had completed one to two more years of formal education than the father.

TABLE XVIII

PARENTS LIVING ARRANGEMENTS

	Number and Percentage In Each Category	
Home	Number	Per Cent
Own	39	40
Rent	46	47
Live With Relatives	12	12

Table XVIII indicates that 40% of the parents of those surveyed owned their own homes and 12% lived with relatives. The largest category was renters with 47%. Table XXI may indicate the reason for the largest number of renters as only 39% of the fathers and 6% of the mothers were employed.

TABLE XIX

TIMES MOVED IN LAST 5 YEARS

	Number and Percentage In Each Category	
Times Moved	Number	Per Cent
0	41	42
1	28	29
2	17	18
3	6	6
4	3	3
5 or more	2	2

Table XIX indicates that the parents of those surveyed are not a mobile group. 42% had not moved in the past 5 years and only 11% have moved more than 2 times in the past 5 years.

TABLE XX

EMPLOYMENT STATUS OF PARENTS

Employment Status	Number and Percentage in Each Category Father No. & %		Mother No. & %	
Employed	38	39	9	9
Unemployed	53	55	87	90
Retired	5	5	--	--
Deceased	1	1	1	1

The overwhelming majority of the fathers and mothers listed their employment status as unemployed. 55% of the fathers were unemployed and 90% of the mothers did not work outside the home. Only 39% of the fathers were employed and 9% of the mothers worked outside the home. 57% of the fathers indicated they were retired. This indicates that over half or approximately 60% of the families interviewed were dependent on public assistance or some form of charity for their livelihood.

TABLE XXI

PARENTS SKILL TRAINING

Training	Number and Percentage In Each Category Number	Per Cent
Yes	14	15
No	83	85

This question asked if the parents of the students interviewed had ever participated in any type of training program. Only 15% had taken skill training and most of this was short courses or on the job training for employment on the railroad. None had been involved in any organized structured program which would provide the parents with a salable skill with which to seek employment.

TABLE XXII

PARENTS SEEK EMPLOYMENT IN ANOTHER REGION

	Number and Percentage In Each Category	
Another area or region	Number	Per Cent
Yes	23	24
No	74	76

Although approximately 60% of the parents were unemployed as indicated in Table XX, 76% of the parents had made no attempt to obtain employment in another region outside the immediate area. Of those who had sought and obtained employment, they indicated that they were not happy in another locale and were unable to adjust and thus did not stick with the employment they obtained.

TABLE XXIII

DIFFICULTY IN FINDING EMPLOYMENT

	Number and Percentage in Each Categort	
Difficult to Find Job	Number	Per Cent
Yes	87	91
No	4	4
Don't Know	5	5

Although the survey group of parents had not been very mobile in seeking employment outside of the immediate area 91% of the parents indicated they felt it was more difficult to find employment now than 20 years ago.

TABLE XXIV

REASONS JOBS ARE DIFFICULT TO OBTAIN

	Number and Percentage In Each Category	
Reason	Number	Per Cent
Lack of Education	92	95
Shortage of Jobs	5	5

As indicated by Table XXIV 95% of the parents felt the reason it was more difficult to obtain a job was because of a lack of education. In our talks with the parents the majority indicated they, in most instances, had not had the opportunity to obtain an education as their children have had and they realized this has been a major factor for their being in the predicament in which they find themselves.

TABLE XXV

TYPES OF TRAINING IN WHICH INTERESTED, NUMBER AND PRIORITY

Area	1st Choice	2nd Choice	3rd Choice
Auto Mechanics	19	11	5
Carpentry	14	13	9
Heavy Equipment	3	0	1
Masonry	3	5	3
Plumbing	3	3	7
Auto Body Repair	5	9	9
Waitress	7	1	6
Secretarial	10	10	9
Seamstress	3	4	4
Nursing	12	8	6
Welding	1	7	5
Electrical	2	3	8
Electronics	2	1	1
Beauty Culture	2	1	2
Clerk	0	8	5
Small Engine	0	2	0
Key Punch	0	1	2
Graphics	0	0	1
Agriculture	0	0	2
Drafting	0	0	2

Table XXV indicates the type of training by first, second and third choice and the number who were interested in each particular area. As was expected, the boys placed a high priority on training in auto mechanics and carpentry. The highest areas of priority for the girls was in nursing and secretarial training. Ten of those who were surveyed were not sure of the areas in which they would be interested or were not interested in participating in any type of training program.

TABLE XXVI

PARENTS VISIT SCHOOL

	Number and Percentage in Each Category	
School Visitation	Number	Per Cent
Regularly	3	3
Occasionally	17	18
Never	77	79

Table XXVI is very significant in that 79% of the parents interviewed never visit the schools and only 3% visit regularly. The parents indicated that they felt they were not welcome at the school and that no one was interested in listening to their ideas or views concerning the school and the school system.

TABLE XXVII

SCHOOL PERSONNEL VISIT IN THE HOME

	Number and Percentage In Each Category	
School Personnel Visit	Number	Per Cent
Regularly	0	0
Occasionally	8	8
Never	89	92

As is indicated by Table XXVII 92% of the parents indicated that no one from the school had ever visited in their home. Of the 8% who had had school personnel visit, this occurred only occasionally. They indicated that this usually occurred when their child had a discipline problem, was truant, or was visited by the Home Economic or Vo-Ag instructors to check on the students summer project.

Tables XXVI and XXVII indicate that there is a total lack of two way communication between the school and the home and that if some respect and trust for the other is to be developed, some means must be developed to bridge this gap.

TABLE XXVIII

HEARD ABOUT NEW VOCATIONAL SCHOOL

	Number and Percentage In Each Category	
New Vocational School	Number	Per Cent
Yes	88	91
No	9	9

As is indicated by Table XXVIII 91% of the parents had heard about the new vocational school to be built in Summers County. Apparently, we have been able to do a better job of informing the public of this new facility than we have been able to do in regard to other matters in the past.

TABLE XXIX

DROP OUT CHURCH ATTENDANCE

	Number and Percentage In Each Category	
Church Attendance	Number	Per Cent
Regularly	14	15
Occasionally	8	8
Never	75	77

Table XXIX indicates that only 15% of the drop-outs attend church regularly and only 8% occasionally. The overwhelming majority or 77% never attend church services.

TABLE XXX

PARENTS ATTEND CHURCH

	Number and Percentage in Each Category	
Church Attendance	Number	Per Cent
Regularly	21	22
Occasionally	5	5
Never	71	73

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Table XXX indicates that the overwhelming majority, or 73% of the parents never attend church. Although the church attendance of the parents is a little better than their children, there is an example of the parents being followed by their children in regard to church attendance.

TABLE XXXI

PARENTS ATTEND P. T. A.

	Number and Percentage In Each Category	
P. T. A. Attendance	Number	Per Cent
Regularly	6	6
Occasionally	5	5
Never	86	89

Table XXXI indicates again the total lack of communication, respect, interest, and trust which exist between the home and the school. 89% of the parents never attend P. T. A. meetings while only 6% attend regularly and 5% occasionally.

TABLE XXXII

HELP THE NEW VOCATIONAL SCHOOL BE A SUCCESS

	Number and Percentage In Each Category	
Successful Vocational School	Number	Per Cent
Yes	93	96
No	4	4

Table XXXII indicates that 96% of the parents were interested and would help to assure the success of the new vocational school.

This means not necessarily by their attendance, but by their moral support, good will, and by encouraging their children who have dropped out of school and others to take advantage of the training programs which will be made available to them.

Conclusions:

We feel that we were able to accomplish the research objectives we had established prior to beginning the survey.

Although we were unable to contact all the dropouts we had on our list for various reasons, such as having moved from the area, getting married, in service, etc., we feel that we were able to survey enough to give us a good sampling and to establish patterns of how they feel about "The System".

As was stated previously, most of the outcome objectives would be long range but some positive outcomes have already been realized. An Adult Basic Education class was organized at Sandstone High School with seventeen (17) dropouts enrolling from the old Green Sulphur District. For dropouts in the Hinton area, an Adult Basic Education class was organized at Lincoln School with twenty-two (22) dropouts enrolling.

Six (6) of these persons successfully passed the G.E.D. Test for their High School Equivalency Diploma July 12, 13, 14, 1972 and one (1) has already been successful in obtaining employment as a stock clerk.

We anticipate approximately fifteen (15) others being ready to take the G.E.D. Test in September.

The grants for the new vocational school in Summers County have been awarded and advertisements for bidders have been placed with bid openings scheduled for August 23, 1972. Hopefully, this facility will be completed by August of '73.

Even though this facility is only a year or so off, we believe that this is too long to wait to develop and commence training programs for the dropouts. We feel that if this is not done in the very near future, the high interest which has been generated will diminish.

RECOMMENDATIONS:

1. Teachers should learn to know individual students through home visitations (oriented and planned).
2. A planned program in the total school to fit the need, aptitude, ability and interest of the individual student. (A continuous evaluation should be in evidence to document this recommendation.)
3. There should be planned, promoted and executed school visits by parents at all grade levels. These visits during the school year should be made during regular school hours and after school hours.
4. Part of the school visitation program should be in the direction of parent group-teacher group conferences, perhaps two or three times a year.
5. Employment-oriented programs should be available to all students from junior high through high school.
6. Every teacher should help with the counseling and guidance programs.
7. Disadvantaged program proposals should be written and submitted to the Vocational Division of the State Department of Education to provide training programs for the drop-outs when a vocational director is appointed for the county.

THIS INFORMATION IS STRICTLY CONFIDENTIAL AND IS TO BE USED ONLY BY THE PROJECT DIRECTOR IN VOCATIONAL PLANNING.

EDUCATIONAL AND INFORMATIONAL SURVEY

School Drop-Outs and Unemployed Youth, Including Family, of Summers County

Name_____Age____Date_____Sex_____

Address_____Community of _____
Street Number

_____ _____
Post Office State

Telephone Number _____Social Security No._____

Last School Attended_____ _____
School Date

If you did not complete high school, what were your reasons for dropping out? _____

_____

_____

Highest Grade Completed _____ Have you regretted dropping out of school? _____

If you could have completed the assignments would you have stayed in school? _____

What person or persons were the greatest cause of your dropping out? _____

_____

How far did you live from school?_____Did you ride the School bus? _____

Did you own a car while you were in school? _____
Was this good or bad? _____

Do you own a car now? ____ Model_____ Make_____

Number of miles you live from Hinton (one way) _____

Have you ever been in military service?_____How Long_____
What branch? _____

Marital Status: Married____Single___Divorced_____
No. of Children____ Widow(er)_____

Number of Children at Home_____ Number of Children in School _____

Total Number of Dependents_____

Are you presently employed? _____ Where _____

Type of work you do _____

Your earnings for past 12 Months _____

If you are in need of help or need information on some matter of concern to you, who is the person in your community you contact? _____

When the New Vocational School is completed will you be interested in attending to complete your high school education and to enroll in an Adult Training Program _____

What type of training are you interested in?

First Choice _____Second Choice_____

Third Choice _____

Do you attend church and/or Sunday School? _____

Father's name _____Formal Education _____
Grade Completed

Mother's Name _____Formal Education_____
Grade Completed

NOTE: If this youth is married and has his own home, he will answer the questions. If living with parents they will answer the following:

Do you own your home?____Rent?___Live with relatives____

How many times have you moved within the past 5 years____

Are you employed? Father_____Mother_____

What job or trade? Father_____ Mother _____

Have you been in any type of training program?_____
Name _____

Have you tried to find a job in some other region? _____

Is it more difficult to find a job now than it was several years ago? _____

Why do you think this is the case? _____

Why do you think _____ dropped out of school? _____
Child's name

_____

Do you have a car? _____ TV? _____ Inside Plumbing? _____

Do you attend church? _____ P. T. A.? _____

How often do you visit the school? _____

How often does someone from the school visit you? _____

What school improvements do you suggest? _____

_____

Have you heard about the New Career Center (Vocational School) for Summers County? _____

How did you learn about the center? _____

How can the Career Center help your family? _____

_____

Will you help to make the Career Center a success? _____

Additional comments by the person making this survey

_____

_____

_____

NOTE: Surveyor will make what comments he cares to make immediately after completing the survey and out of the presence of the person or persons surveyed.

I. Is this a good prospect for future training programs? Why or why not?

_____
_____
_____
_____

II. If this youth lives with his parents, how do you think the family looks at the new Vocational School?

_____
_____
_____
_____

III. Without any formal testing what do you judge the educational level of the person surveyed?_____
According to your observation, explain _____
_____
_____
_____

IV. What seemed to be the general attitude of the youth to the interview? _____
_____
_____
_____

V. What seemed to be the general attitude of the parent or other members of the family at the interview?

_____
_____
_____

VI. Provide a brief description of the home, home conditions, and surroundings. _____
_____
_____

VII. Did all members of the family seem agreeable to give the time for the survey? _____ Explain _____
_____
_____
_____

Summers County Educational-Research Project
Lincoln School
Box 430
Hinton, West Virginia 25951

Dear Fellow Co-Workers:

For the past weeks we have been visiting you young adults in Summers County who have left school before high school graduation, and, in some instances we have had the pleasure of talking with some who have graduated.

We have enjoyed visiting in your homes, meeting your parents and friends, and above all, we have enjoyed the friendly attitude and the very courteous manner you have received us.

We came away from each interview with the feeling that we had made friends, that the task we were attempting was being shared by each of you, including the whole family, and we were pleased with the prospects. Your willingness to discuss your situation with us was evidence that you wanted to do something to improve your educational standing and to move toward some particular job-training goal. We thank you for this good reception and we urge your continued cooperation.

I am sure our meeting is still fresh in your memory, the many things we talked about, the why of your dropping out of school, the proposed new vocational school, what vocational skill you would like to be trained in, the when and how to get your High School Equivalency Diploma, and many other areas.

You will remember, as part of our long-term plan, we were to keep in touch by means of writing to each other.

A self-addressed envelope is enclosed, as promised, for your convenience in making your first communication to us. We have also enclosed paper for your return letter.

Tell us what you think of the Educational Survey. You have had time to think about the things we talked about so you might want to tell us more:

1. Why you dropped out of school.
2. What your first, second and third choice of training is
3. How you think the new vocational school will help you and/or your family.

4. What your plans are for entering an Adult Basic Education Class to get you High School Equivalency Diploma----when would you like to start?

Write us a long letter and drop it in the mail within the next few days.

Let this letter serve as the beginning of a "Let's Help Each Other Program".

Sincerely yours,

Gene Davis
Project Director